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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

"STAMPING AND EMBOSSING: A MODERN
ADAPTATION OF PRE-COLUMBIAN METALWORKING PROCESSES"

By

Richard W. Coble

April 1, 1981

APPROVALS

Advisor: Gary Griffin

Date: 12 MAY 81

Associate Advisor: Name Illegible

Date: April 1 1981

Associate Advisor: Dary MacMillau

Date: May 8, 1981

Graduate Academic
Council

Representative: Fred Meyer

Date: 5/15/81

Dean, College of
Fine & Applied Arts: Robert Johnston

Date: 5/15/81

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CONTENTS

LIST OF ILLUSTRATIONS.....	iv
INTRODUCTION.....	1
TEXT.....	3
BIBLIOGRAPHY.....	57

ILLUSTRATIONS

Figure

1.	Map of Peru showing Chavin Area	2
2.	Chavin Bowls	6
3.	Map of Peru showing Chimu Area	8
4.	Mochica Goldwork	9
5.	Chimu Gold Mask with Red Paint	10
6.	Map of Peru showing Inca Empire	12
7.	Stylized Inca Face made of Hammered Gold	13
8.	Map of Columbia	14
9.	Narino Embossed Gold Ear Discs	16
10.	Calima Hammered Gold Pectoral	17
11.	Quimbaya Stylized Gold Alligator	21
12.	Tolima Flat Stylized Figure	22
13.	Muisca Figure with small applied Parts	23
14.	Sinu Bird Finial on end of Cane	24
15.	Tairona Gold Nose Ornament	25
16.	Hammered and embossed Panamanian Goldwork ...	27
17.	Famous Gold "Eagles" from the Province of Verguas	29
18.	Cocle Goldwork with dangling Circles	30
19.	Costa Rican Figure cast by Lost-Wax Method ..	31
20.	Brooch of Acrylic, Bronze and Embossed Gold by R. W. C.	39
21.	Back View of Fig. 20 showing Pin Stems	40
22.	"Precious and Few", Embossed Handmade Black Paper with Three Diamonds	43
23.	Constructed Brooch of Delrin, Sterling and Nickel Silver	46
24.	Intaglio Print on Silk with Ruby	47
25.	Brooch, Intaglio Print on Silk with Acrylic .	49
26.	Brooch, Embossed Gold with Acrylic Frame	50
27.	Brooch, Chased Silver, Acrylic, Aluminum and Diamonds	51
28.	Wall Piece of Acrylic and Bronze	52
29.	Wall Piece of Acrylic and Bronze	53
30.	Wall Piece with Removable Paper and Bronze Brooch	54
31.	Back of Brooch, Fig. 30, Acrylic, Paper, Steel, and Bronze	55
32.	Brooch of Delrin, Acetate and Nickel Silver ,	56

INTRODUCTION

The thesis which follows focuses on the metal-working techniques of the Pre-Columbian cultures of South America, Central America, and Mexico. The text has been organized to present a historical overview which documents the evolution of the "state of the art" in Pre-Columbian metalworking as a result of progress in technology over time and its transmission over an increasingly large geographical area. In presentation, I will discuss two major aspects of Pre-Columbian metalwork--the surface embellishment techniques of stamping and embossing, and the use of pigments for coloration in conjunction with the elements of the various Pre-Columbian cultures. These aspects had a significant impact on the metalwork produced. This section of metalworking is followed by an explanation of my own usage of embossing, printing, and coloration as surface embellishment.



Fig. 1. Map of Peru showing Chavin area

The Chavin period takes its name from the archaeological site of Chavin de Huantar in the east central highlands of Peru. A group of masonry buildings, occupied between 800 and 200 B.C., gives evidence that a large community once existed there. There is proof that a growing population was managed through religious and civic controls and that there was an interest in ceremonial and public buildings.¹

The art of the Chavin period is based primarily on the religious beliefs of the culture and is highly representational. The feline, legendary throughout South America for its courage and strength, is a predominant subject in Chavin art along with iconographic configurations of serpents, birds, and humans. The most notable conventions in the art of the Chavin period are the use of symmetry, repetition of forms, decorative modular bands, and the abstraction of recognizable imagery into a combination of straight lines, simple curves, and scrolls.

Metallurgy was one of the major technological achievements of this period. Gold, the first metal to be worked by the Peruvians, was probably found in nuggets washed on the banks of rivers and streams. The Peruvians melted small quantities of metal in crucibles in small furnaces. The amounts of metal combined always varied in the percentage of composition.

¹A. D. Tushingham, Gold for the Gods (Toronto: Royal Ontario Museum, 1976), p. 30.

The metalworkers were unable to reach the high temperatures required to melt pure silver, gold, or copper, but because of the process of alloying, they were able to melt a combination of those metals which required a much lower temperature. Peruvian silver was usually alloyed with copper and occasionally with gold. All golden objects were an alloy of gold, silver, and copper with proportions of the elements within the alloy varying from object to object and even within the same object. The Peruvians often combined and re-melted alloys.²

Techniques were developed for the alloying of gold with silver and copper to produce sheets of metal with silver or gold surfaces. This process was known as the mise en couleur method. The metalworker worked with an ingot alloyed of copper and silver and hammered it into a thin sheet. When the metal became work-hardened, the metalworker heated the metal to an annealed state at which time the metal became soft enough to work again. When the metal was annealed, a copper oxide appeared on its surface. The oxide was then removed by pickling in a mild acid made from fruits and leaves. Hammering and annealing were continued repeatedly until a layer of silver appeared on the thin sheet of metal.³

A similiar method was employed to produce a gold surface, but the process was continued past the stage in which the silver layer appeared on the surface of the metal until a layer of gold appeared.

²Wendell C. Bennett, Ancient Arts of the Andes (New York: The Museum of Modern Art, 1954), pp. 112-113.

³A. D. Tushingham, Gold for the Gods (Toronto: Royal Ontario Museum, 1976), p. 58.

A much stronger acid than that used to remove the copper oxide was needed to remove the silver from the surface of the metal. Various clays or a mixture of soil with a high concentration of potassium nitrate, alum, salt, and water were combined to make a paste which was used as a corrosive. The paste was applied to the silver causing a thin, black scale to appear. This was removed with a strong hot solution of salt and water. Burnishing and heating consolidated the gold to the surface to produce a smooth, shiny gold finish.⁴ This method of hammering, annealing, and pickling is now called "depletion gilding." The major disadvantage in the use of this method is the possibility that later corrosion would break down the surface coloration. Such a breakdown appears in many of the objects where copper, gold, and silver are visible on the same surface.

The appearance of two metals side by side was probably achieved through partial depletion gilding. The paste was applied to only one side to produce a gold and silver surface side by side. If a surface embellishment was to be applied to the object, it was done after the hammering process but before the corrosive paste was applied.

The techniques of embossing, chasing, and burnishing were employed and executed with simple stone tools. Three-dimensional objects were raised on stone stakes.⁵ Methods of joining these objects together include rivets, staples, clamps, overlapped edges, soldering, and welding.

⁴Ibid., p. 59.

⁵Wendell C. Bennett, Ancient Arts of the Andes (New York: The Museum of Modern Art, 1954), p. 113.

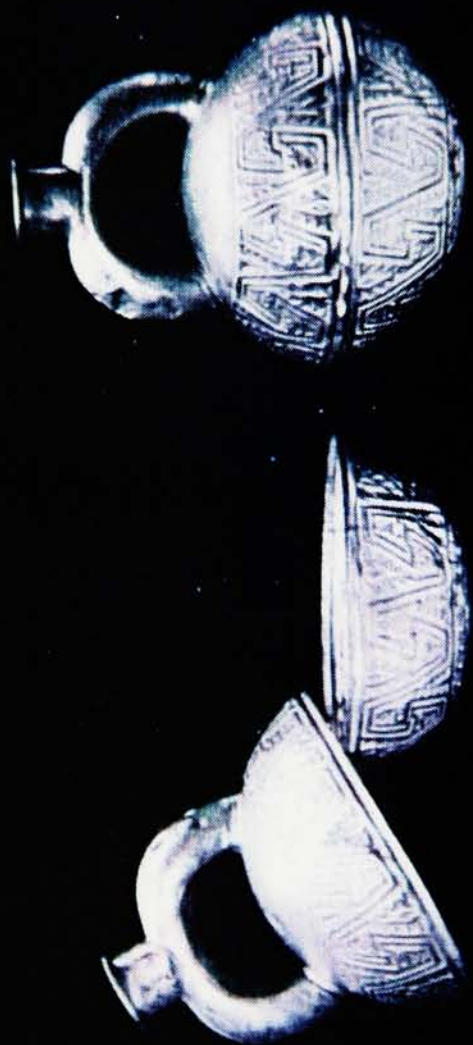


Fig. 2. Chavin bowls

The surface coloration of the metals was achieved through various methods. One method of coloration was through the alloying process which would give the metal a range of colors depending on the percentages of metals melted together. The colors varied from pale green to yellow to reddish brown.

The Peruvians often painted gold objects with blue, white, green, and especially red pigments. Often color was added through application of feathers, shells, and some precious and semi-precious stones. The Peruvians also used the lost-wax casting technique known as cire perdue to create their objects, but this was not as popular as the hammering method.

The Mochicas, a culture from the northern coast of Peru, were worshippers of nature. Their artistic styles reflect a tendency toward realism and the depiction of natural forms. The feline, as in the Chavin period, was an important design element.

The Chimu occupied the same area of the north coast as the Mochica did earlier; however, they established their capital at Chan Chan in the Moche valley. There is considerable cultural continuity between the Mochica and the Chimu.

The Chimu formalized the architectural features of the Mochica, produced rectangular enclosures, and used "city planning" and masonry construction.

The Chimu established themselves at Chan Chan and built a series of rectangular enclosures called "cuidadelas." The cuidadelas faced north to south with a single



Fig. 3. Map of Peru showing Chimu area



Fig. 4. Mochica goldwork



Fig. 5. Chimu gold mask with red paint

northern entrance and three internal divisions. These *cuidadelas* seemed to indicate wealth and economic control by the use of strategically placed inner structures.

The word Inca means "Lord" and this term was given to the leader of the state and the religion. The scarcity of Inca objects is a result of the Spanish conquest and their systematic looting of villages. The Spanish conquered the Incan capital, Cuzco, and confiscated its gold including decorative bands on buildings, gardens of gold, and altar ornaments from the Temple of the Sun. Nearly all of the objects were melted into bullion. About a year and a half after Pizarro landed in Peru, he and his men, along with the king of Spain, divided over seventy million dollars worth of gold and silver.⁶

Inca designs were generally geometric using combinations of bands, squares, checkerboards, diamonds, circles, triangles, crosshatching, and dots. They also used representational designs of animals, butterflies, bees, and humans. Besides manufacturing gold ornaments, the Incas used gold to cover walls of palaces and temples. The Incans are famous for the abundance, monumentality, delicate detail, and craftsmanship of their goldwork.

All the areas of South American goldworking produced objects of distinct character and style. Peru and Ecuador seemed to favor producing their work by hammering despite their technical knowledge of casting. The Pre-Columbian metalworkers incorporated the largest variety of style and diversity of technique into their goldwork that is found in the metalwork in any single Ancient American area. The primary methods of goldworking were casting and hammering. The pieces that were

⁶A. D. Tushingham, Gold for the Gods (Toronto: Royal Ontario Museum, 1976), p. 52.

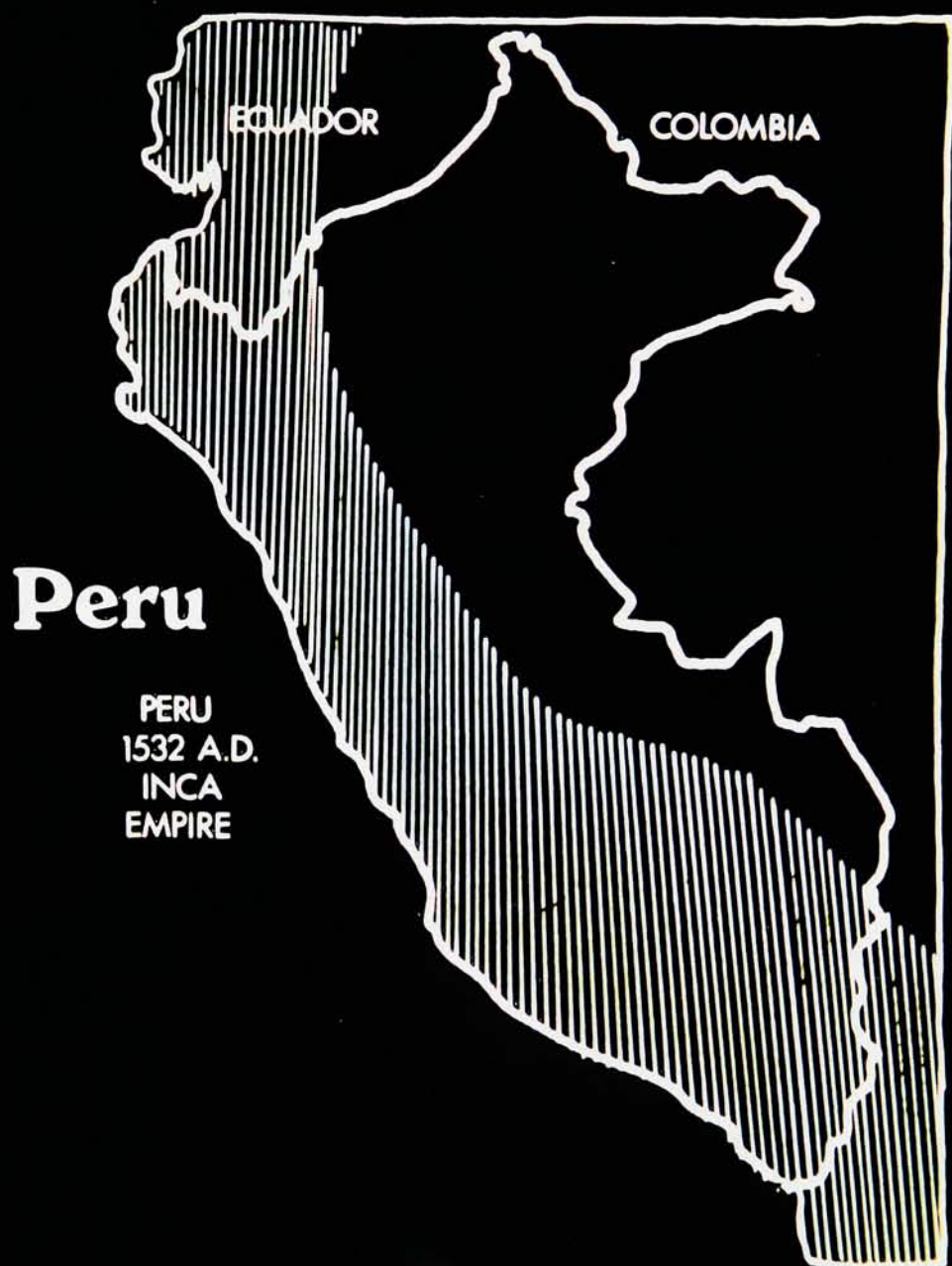


Fig. 6. Map of Peru showing Inca Empire



Fig. 7. Stylized Inca face made of hammered gold



Fig. 8. Map of Columbia

produced were derivative of natural and stylized forms. Naturalism produced straightforward human figures while stylization produced inorganic patterned shapes. As a middle land, Columbia was influenced by the areas surrounding it.

The Andean region, noted for its goldworking, is currently identified by the following geographic locations as the Narino, Calima, Quimbaya, Tolima, Muisca, Sinu, and the Tairona.

The Narino area was influenced by the cultures of Ecuador and Peru. Objects were made of hammered or cast gold and finished in a variety of techniques such as plating overlay, oxidation gilding, and polishing. The most common objects are breast plates, plaques for textile appliques, nose rings, and ear discs. Nose ornaments were made with open work, pattern embellishment, dangles, or small paired plaques in which raised human or feline animal forms are the most common decorative motifs.

The Calima river area, famous for the quality of ancient gold found there, exhibited hammered pectorals and funerary masks of considerable size and simple beauty. Funerary masks were made of sheet gold and were embellished only with the facial features that could be naturalistically rendered. The pectorals, headdresses, and arm ornaments were decorated with raised human faces which were almost completely covered by large nose and ear ornaments. The eyes were rendered closed with simple lines. The metalwork is extraordinarily large and the borders are decorated with geometric and zoomorphic designs. The nose rings, breast plates, bracelets, and diadems were made of highly polished, fine quality gold. The heads of decorative pins are masterpieces of lost-wax



Fig. 9. Narino embossed gold ear discs

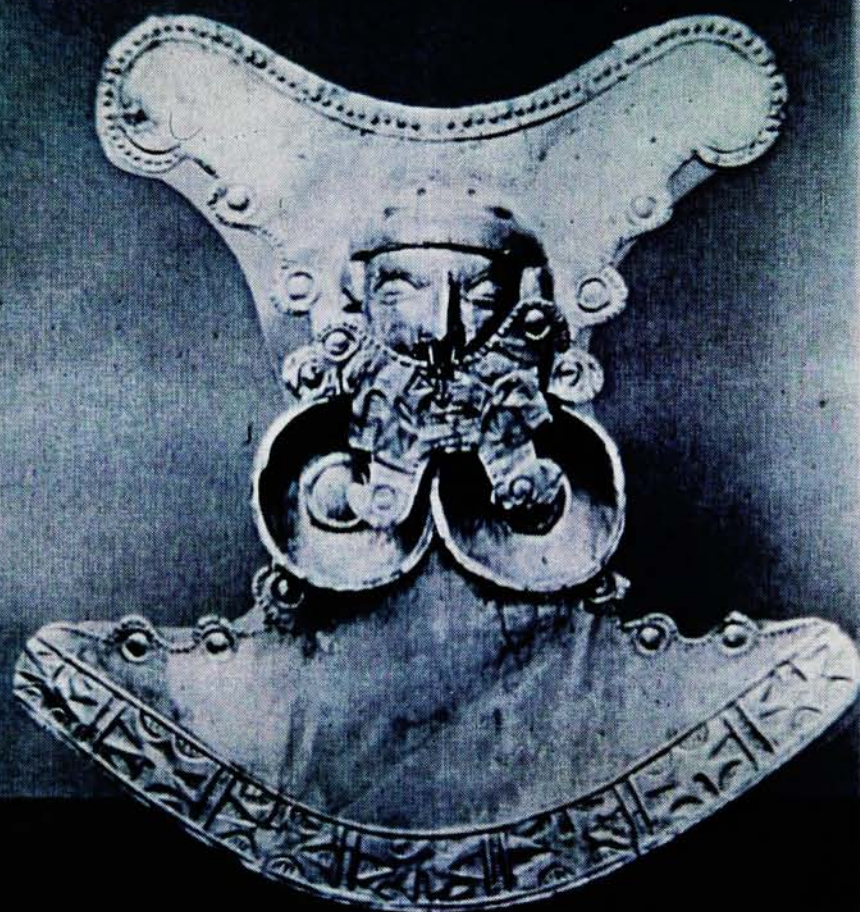


Fig. 10. Calima hammered gold pectoral

casting. This culture is most noted for objects made of thin metal sheets which are joined by folds and attached with nails.

Near the Cauca River is an area known as Quimbaya that produced gold objects with very different images. Their objects are sleek and polished, more complex technically than most Pre-Columbian goldwork, but visually simpler. The human figure is a dominant subject. The goldwork is a product of highly developed technology and exhibits fine realism, formal proportions, decorative simplicity, and elegance.

The Tolima region was settled by a group of farmers engaging in active commerce with neighboring groups.⁷ Most of the Tolima metalworks were products of the lost-wax casting method. The human figure, rendered as a stylized, flat, angular outline, is typical of this group along with stylized renderings of birds and bats. The Tolima are best known for the development of a formalized pendant with a winged shape that combined animal features and inorganic patterns. The work is designed with simple shapes, all of which are completely visible. No overlapping shapes obscure a total view of the piece.

The Muisca area is located on the high plateau of Cundinamarca and Boyaca. The inhabitants populated the countryside and only occasionally concentrated to form a village. The Muiscas were terrace farmers and active traders with social and political divisions that promoted the establishment of specialized craft guilds.

⁷El Dorado (The Gold of Ancient Columbia, El Museo del Oro, Bogota, Columbia, Banco de la Republica, 1974) p. 97.

The goldwork of the Muisca was the most stylistically and iconographically distinct of all ancient Columbian gold. The goldwork produced by the Muisca was constructed of flat sheets with small applied parts. Even their three-dimensional objects had a very flat quality with surfaces that were rather rough and dull. The Muisca figurines are the best technical examples of casting in the Pre-Columbian era. The Muisca work includes many pieces of tumbaga which is a metal alloy containing 30% gold, 70% copper and silver. Many copper objects were also produced. A distinct characteristic of the Muisca metalwork are the "tunjos," objects rendered in a generalized human form. The tunjos exhibit detailed decorative elements and indicate the sex of the figure. Muisca design elements consisted of lattices with diamond or square-shaped openings, triangular fretwork, and simple braided or spiral motifs.

The Sinu produced many skilled goldsmiths. Their fan-shaped ear ornaments were cast employing a technique called "false filigree." This is a process in which fine wax wires were produced by extruding wax through a nozzle. The wax wires were often coiled into a given shape and connected with wax. The piece was then cast by the lost-wax method. The finished object gave the appearance that it had been constructed by soldering many coiled wires together to form the object. The Sinu decorative motifs included continuously braided wire and depictions of reptiles and birds. Some Sinu metal objects called "finials" exhibit light-pierced spirals that do not allow light to pass through. The dark spaces or holes accentuate the detail in the finials.

The Tairona lived on the lower slope of the northern and western regions of the Sierra Nevada de Santa Marta.

They had an organized social and political system. The remains of roads, bridges, floors, and stairways demonstrate their engineering and architectural skill. The Tairona built agricultural terraces and irrigation systems to support a variety of crops. They also traded jeweled objects and textiles with other coastal and inland people.⁸

The Tairona had varying funeral customs and often used urns for secondary burials. Their complex religious system included a belief in magic which is still practiced among some of the people of the High Sierra.

Objects made of tumbaga were abundant and generally found with a patina of copper oxide. The objects show traces of highly polished surfaces and complicated renditions of figures. Regular geometric design and stylized reptiles and birds also frequent their decorative motifs.

Small, stubby, muscular human figures wearing headdresses, bar nose rods, and lip plugs appear in a great many Tairona objects. The enormous headdresses were decorated with multiple bird heads, sprays or spirals, circles, and arrays of dangles. The headdressed Tairona figures, like so many other ancient American gold objects, were for personal adornment.⁹

The Tairona culture used nose ornaments more than any other ancient Columbian culture. The nose ring was the most common of all personal adornment with styles differing from plain and simple to intricate and complex. The metals that were used varied from pure copper to the finest gold and even platinum.

⁸Ibid., p. 127.

⁹Ibid., p. 30.



Fig. 11. Quimbaya stylized gold alligator

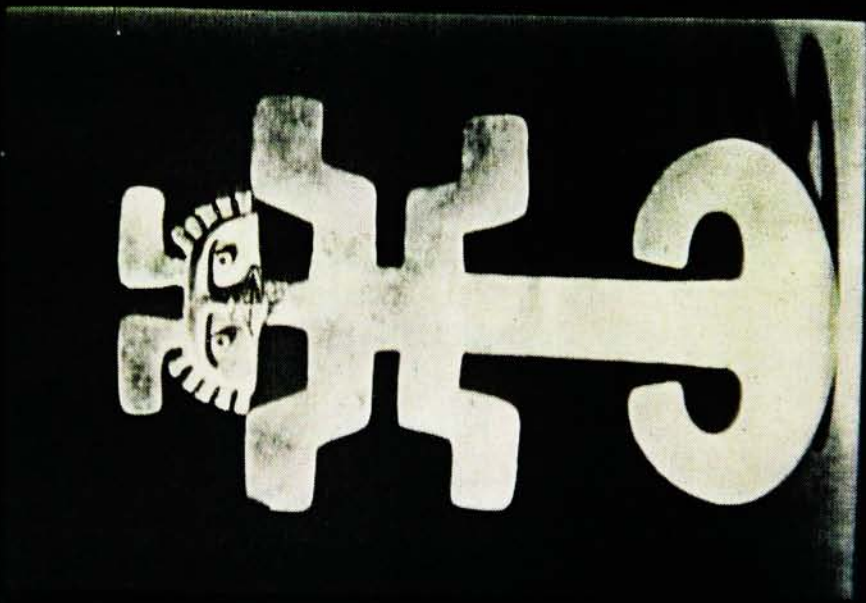


Fig. 12. Tolima flat stylized figure

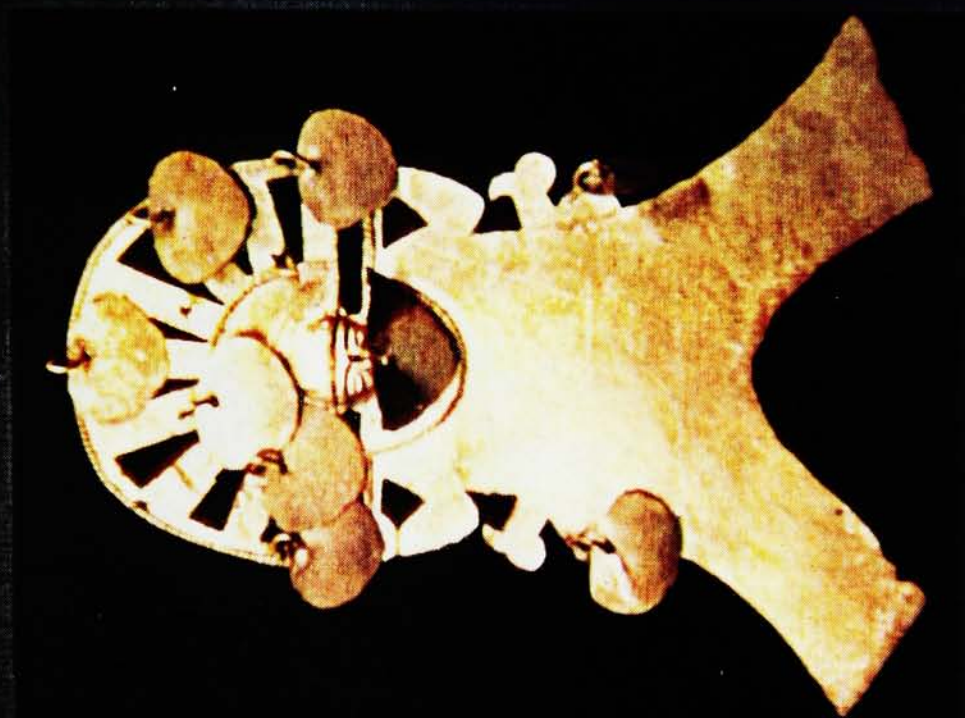


Fig. 13. Muisca figure with small applied parts

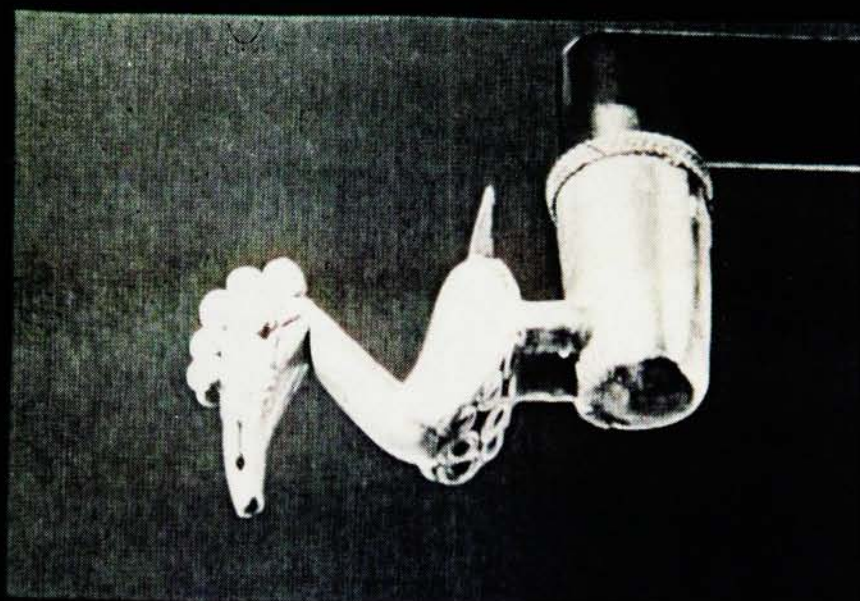


Fig. 14. Sinu bird finial on end of cane

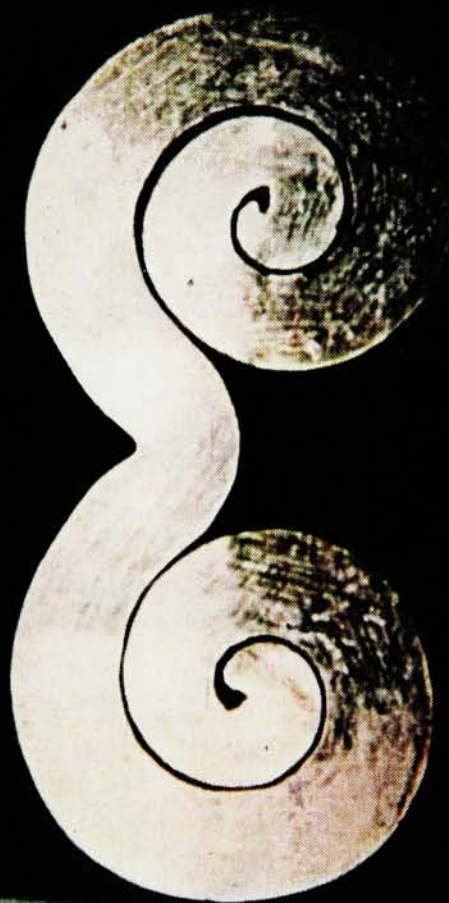


Fig. 15. Tairona gold nose ornament

Simple tools such as chisels, needles, polishers, scrapers, and fishhooks were also made of gold. The wealthy owned golden spoons and bowls. Vessels known as "poporos," used as lime containers for coca chewing ceremonies, were also made of gold.¹⁰

The Isthmian area located midway between the Andes and Mexico played a vital role in bringing goldworking into Mexico. Panama and Costa Rica formed a single metallurgical province which could be characterized by its preference for lost-wax casting and by its use of gold-copper alloys, depletion gilding, and false filigree.

There were great similarities between Quimbaya goldwork and Panamanian goldwork. There is evidence that the people of these regions traded their gold objects with each other. The Isthmian goldsmiths travelled northern routes carrying gold objects and tools which they traded. It was through these travel routes that the goldsmiths brought the technological advancements of simple metallurgy to the people of Mexico.¹¹

Panama and Costa Rica were unified by a similar iconography and similar approach to the materials. This area is famous for its gold eagle pendants of simplified bird outlines. These came from the Province of Veraguas in Panama. The Panamanian Province of Coclé produced a great variety of cast and hammered gold jewelry. Among these artifacts were cuffs, socketed ear spools, and breast plates which were attached to clothing rather than worn around the neck. Breast plates were worn by

¹⁰Ibid., p. 59.

¹¹Ibid., p. 48.



Fig. 16. Hammered and embossed Panamanian goldwork

the chiefs of tribes in battle as an insignia.¹² The crocodile, a dominant motif in Cocle art, was not portrayed in a naturalistic manner, but as a combination of beasts. These beasts were never rendered as threatening, but appeared to express happiness.

As in Panama, the eagle or condor was a favorite subject with the goldsmiths of Costa Rica. Most of the work was cast by the lost-wax method with loops attached to the back to allow the pendants to hang suspended.

Religion played an important part in the goldwork, and some ornaments were intended for use in the afterlife. These were ceremoniously "killed" before being put into the grave with their owner.¹³

Mexico, the northernmost producer of Pre-Columbian gold, was influenced by many other areas, but has a style that was unmistakably unique. Mexico depended on complex religious symbols for the imagery in its goldwork. Mexico is farthest from the general spirit of Pre-Columbian gold that was held by others. However, the ancient goldwork of Mexico has a close visual relationship to the work produced in Mexico today.

The Mixteca-Puebla culture located in the state of Oaxaca was one of the most important cultures in Mexico prior to the Spanish Conquest. This area produced more noteworthy gold than any other area of Mexico.

¹²Allen Wardell, The Gold of Ancient America (Boston Museum of Fine Arts, The Art Institute of Chicago, Virginia Museum, Greenwich: New York Graphic Society, 1968), p. 104.

¹³H. D. Disselhoff and S. Linne, Art of Ancient America (New York: Crown Publishers, Inc., 1960), p. 246.

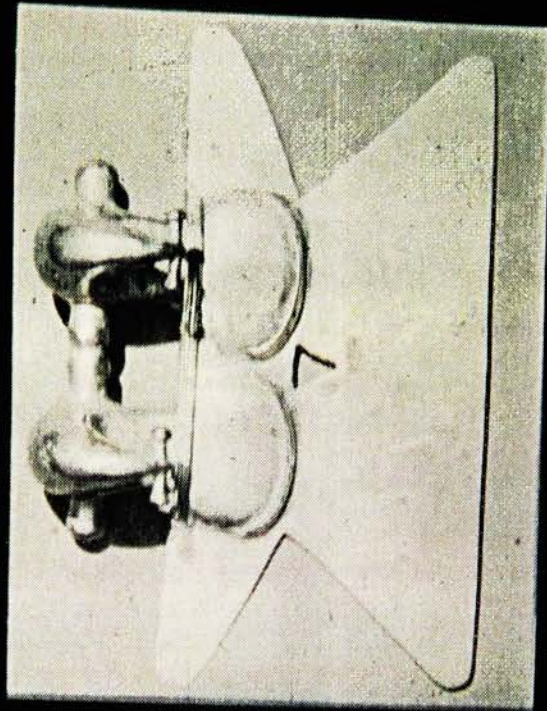


Fig. 17. Famous gold "eagles" from the Province of Verguas

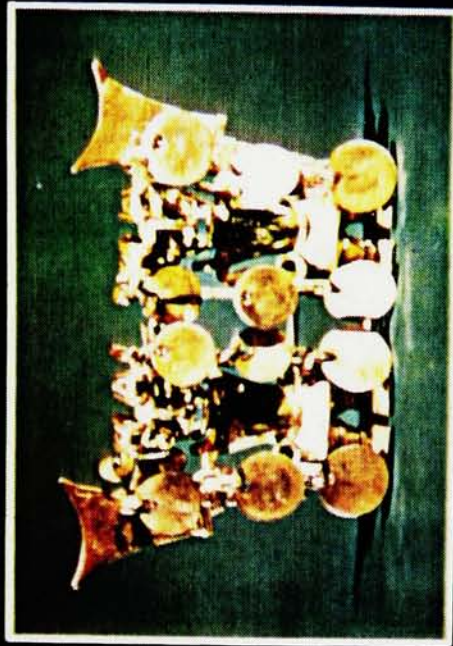


Fig. 18. Cocle goldwork with dangling circles



Fig. 19. Costa Rican figure cast by lost wax method

The jewelry of this area consisted of gold pectorals, masks and crowns decorated with false filigree, pendants, earrings, and rings that were worn between the first and second knuckle. Much of the work was decorated with the depictions of gods and religious symbols. Gold beads were used in conjunction with jade, pearl, and turquoise beads.

Most of the gold jewelry was cast although some had been formed by repousse, a method of hammering a flat sheet from the back until the desired form is achieved. The Mixtec goldsmiths were casters of small mobile bells in various shapes known as "casabeles." These were often used to decorate pendants, earrings, and necklaces. The most outstanding characteristics of the Mixtec jewelry are the sophistication of subject matter and the intricacy and delicacy of design.

The work of the Aztecs was dominated by a religion of nature worship. They appreciated the growing things around them such as flowers, birds, and animals. The Aztec designers constantly used symbols for air, rain, sun, moon, and fertility in their work. All nature's things were symbolized as gods. Death played a major role in the Aztecs' religion and was represented symbolically in their work.¹⁴

Realism was essential in the production of Aztec gold. Their work was made not only to decorate, but to express meaning. The Aztecs were good designers and knew when to elaborate and when to simplify.

¹⁴Jacques Soustelle, Arts of Ancient Mexico (New York: The Viking Press, 1966), p. 133.

Mexico's natural resources included large quantities of metals and semi-precious stones. Mexican goldsmiths produced finely crafted items utilizing these riches. Unfortunately, as with all of the other ancient gold producing areas, looting and greed has minimized the number of available objects for display in museums today.

Pre-Columbian work was unrecognized for a long period of time. However, in recent times, the public has begun to realize its historical, cultural, and artistic value. It can also be said that modern society has realized the artistic and cultural merits of the work above and beyond its monetary value. For many years, only a few important pieces of Pre-Columbian goldwork were exhibited or published throughout the world. It is through the cooperation of many museums, private concerns, and people like Miguel Mujica Gallo that make this growing awareness of Pre-Columbian goldwork possible.

In the 1930s, Miguel Mujica Gallo realized that tombs in the northern part of Peru were being systematically looted. In order to preserve these treasures, he began to purchase some of the more important pieces for his private collection. In 1966, Gallo established the Museo "Oro del Peru" in Lima to exhibit his private collection of Pre-Columbian art. Over the past thirteen years, objects from his collection have been exhibited throughout Mexico, South America, Europe, Canada, and the United States. During 1976 and 1977, a major exhibition travelled to three Canadian cities. This exhibition was a comprehensive collection of Pre-Columbian goldwork entitled "Gold for the Gods."¹⁵

¹⁵A. D. Tushingham, Gold for the Gods (Toronto: Royal Ontario Museum, 1976), p. 9.

A more recent touring exhibition entitled "Gold of El Dorado" was seen in London, Hanover, West Germany, and the United States. The United States tour began in 1979 at the Museum of Natural History in New York. Other American cities include Chicago, San Francisco, and New Orleans. A look at five hundred or so Pre-Columbian gold objects gave the public an opportunity to discover the masterful techniques of these goldsmiths. Many archaeologists believe that the technology of the Pre-Columbians is the most advanced of all the Central and South American Indian goldsmiths, but has been overshadowed until recently by the technology of the Aztecs and the Incas. These exhibitions are made up of pieces primarily from the Museo "Oro del Peru." Now it is possible for millions of people all over the world to see and learn about the legendary Columbian gold artistry.¹⁶

It is clear that the need for personal adornment is certainly not a new concept. Whatever the basis of this need--religious beliefs, utilitarian needs, or artistic expression--man has throughout history possessed a desire to create objects for personal adornment.

The present is an outgrowth of the past. As such, it is useful for the artist to know the roots upon which the present is based and to understand the relationship that exists between the artwork of past and present. This understanding allows for the possibility of projecting the development of trends into the future. The Pre-Columbian culture developed in many ways. Anthropological studies have identified a technology of metallurgy, a theocratic center of religion, a system of government and trade, urbanization with a communal social structure, and the use of objects for personal adornment.

¹⁶Ibid., p. 9.

As the Pre-Columbians pushed towards urbanization, groups of people began to build villages that consisted of dwellings, temples, and political buildings. Architecture provided one means of social definition among masses of people by maintaining the existence of a class structure and by furnishing locations for individual craft guilds, a center of worship, and a market for their goods. The community atmosphere nurtured the exchange of ideas from person to person and from culture to culture, much like our college and urban communities of today.

Urbanization was an important impetus toward increased exchange of information among masses of people. In addition, the masses depended on technology for survival and technology was dependent upon the masses for perpetuation.

Even though contemporary society's relationship with technology appears to be quite different, man's needs have changed very little since Pre-Columbian times. Instead of one theocratic center, we have many which often hold contrasting views but always have reference to a god. While modern man has overcome many of the limitations imposed by geography that the Pre-Columbian people were unable to overcome, geography presently sets political boundaries in many instances. Today there are many forms of government that impose their own kind of boundaries upon vast geographic areas and diverse peoples. The limitations of a particular geography still set the pace for industry and urbanization.

Technology brings about change. It is developed and implemented in order to attain the age-old goal of fulfilling man's basic daily needs. Societies appear to advance as they accumulate items beyond their basic

needs. Technology has reached and shaped some world cultures to a far greater degree than others. Man's survival needs are the common link between all men. It is man's extraneous desires that broaden the gap from culture to culture. In Pre-Columbian times, the absence of modern technology dictated the processes and type of imagery produced by the metalworkers. Large primitive pieces were made by hammering with stone implements. The only means of applying color was through the use of natural pigments, feathers, stones, and other natural objects.

Modern technology provides the metalworker with a vast amount of information far beyond any primitive culture. Machinery allows us to work within exacting specifications and in sizes impractical for hand work. We have added a vast number of materials to contemporary jewelry. Some of the new materials used for pigmentation include colored epoxies, synthetic stones, acrylics, and the noble metals of Titanium, Columbian, and Tantalum. This technology alone will distinguish us from primitive societies. With the rate technology is advancing, it won't be long before present day culture is considered primitive.

My interest in the Pre-Columbians was stimulated because of their use of stamping and embossing metal, two processes that are very much a part of my jewelry. Most of the objects made by the Pre-Columbians were for personal use, whether they were objects to wear, drink from, or to look at. Some objects were created for group use, such as the temple objects and decorations and the lime containers used in the coca chewing ceremonies. Functional objects were an important part of their culture. Generally objects were never associated with a particular craftsman. The Pre-Columbians

displayed a sophisticated use of design and technology. The work of the Pre-Columbians was made at a time when cultural and artistic merit outweighed the monetary value of the materials used. It is obvious that the Pre-Columbians weren't preoccupied with the monetary value of the gold because they often buried it with the dead, painted over it, and never melted down for conversion into bullion or coins.

In my work, I try to differentiate between the monetary and the aesthetic values of the work by employing a material of great monetary value with one of little value; such as diamonds with paper. I hope this contrast serves as an eye opener. I want people to question why I used diamonds and paper instead of the traditionally used diamonds and gold. My answer to this question is this: the materials are chosen for aesthetic purposes. I am not reluctant to mix a material of little value with one of great value in order to achieve the appropriate effect.

I believe that through education and exposure to contemporary jewelry, the public will accept jewelry solely on its artistic merits rather than on the value of the gold, diamonds, and other materials traditionally associated with jewelry. The educational process is multi-faceted. First, the artist must create the visual stimulus--i.e., the object. Next, he must make the public aware of the object's existence through publications and exhibitions. Finally, the artist must substantiate the work's existence with an explanation. This is not to say that the artist needs to explain every piece. However, when the creators combine materials in ways that are atypical, they must help people understand the rationale behind what they are doing. The

process of educating the public about our product is a marketing problem. The product must be made available to the public whether it is for an elite few or for the masses. People cannot respond to something unless it is physically present in some form. In a store, people buy what is on the rack, not what they imagine could be there. The creation, exhibition, and explanation of objects is not limited to jewelry. It extends into all areas of artistic expression.

We live in a fast paced society where petroleum products such as plastics, paper products, and other disposable items are a way of life. Interest in reclamation, preservation, and restoration is beginning to surface in our society only after many of our natural resources have been severely depleted.

I use some materials traditionally associated with jewelry, such as gold, silver, bronze, semi-precious and precious stones. I also incorporate other materials that have only recently become associated with jewelry, such as paper, plastics, and aluminum to name a few. I use plastic primarily for its range of colors and paper for its ability to be embossed, to accept pigments, and to be formed. I use metal for structural purposes, color, and malleability which enables me to emboss it.

A strength in design and understanding of geometry and logic are the vehicles I use as a guide. Color is an important part of the work as a whole because it reinforces the geometry. The colors I use are generally flat and opaque which create planar surfaces. These solid colors are often outlined by a metal linear element that appears to hold the color in shape. By using colors that are similar in value and intensity, the definition

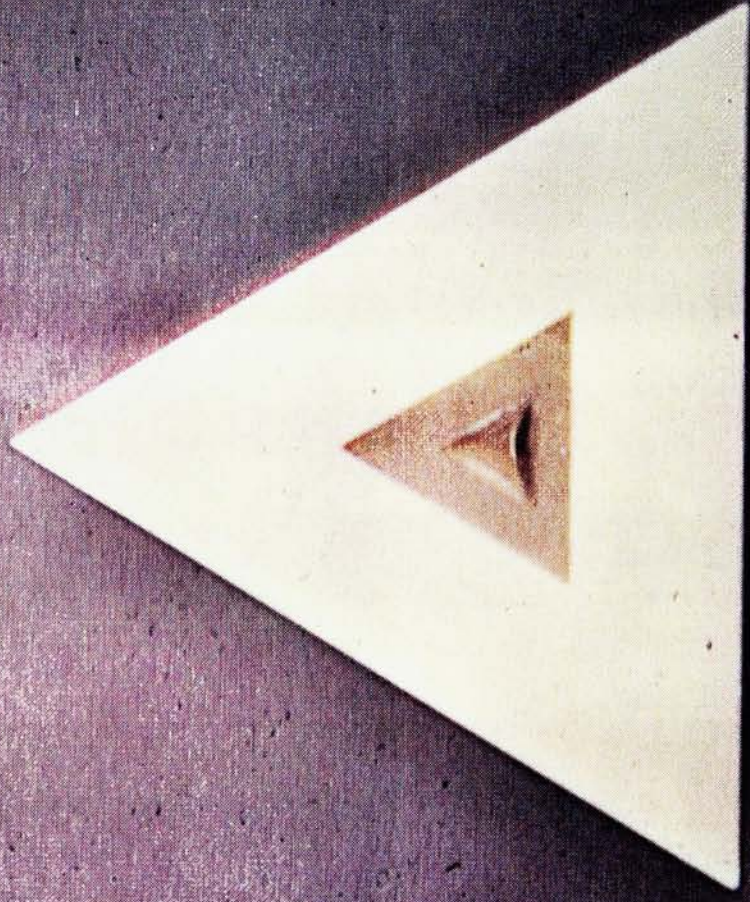


Fig. 20. Brooch of acrylic, bronze and embossed gold by RWC

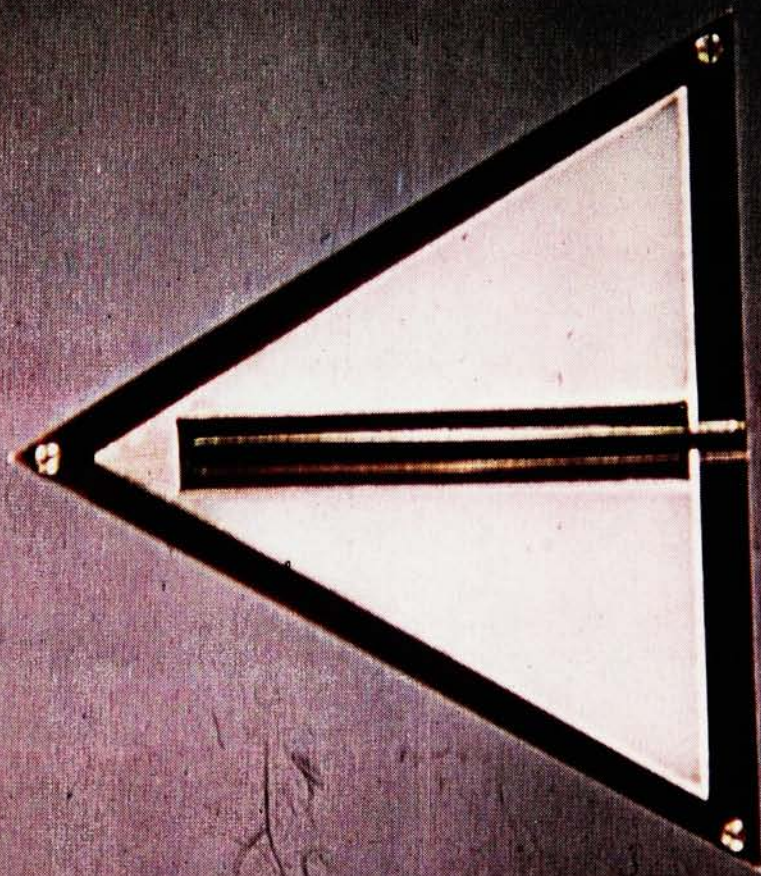


Fig. 21. Back view of Fig. 20 showing pin stems

of shapes is more subtle. With a more subtle appearance, the viewer is required to investigate the image more closely. When I use contrasting colors, such as black and white, the geometric forms are distinct with crisp lines between them. Often I use contrasting colors that make the images immediately recognizable to the viewer. Within these contrasting colors, there are subtle variations which require a closer look. The repetition of a particular pattern in calculated proportions reinforces the image as a whole. The manipulation of materials has a simple appearance, but is indeed informed by format, evaluation, and reconsideration.

I try to follow an organized sequence of events while working. An image comes to mind and I sort out the details until I have a clear solution; then I render it on paper. Additional changes are made if necessary. Once the work is in progress, I try to re-create the rendered image with as few alterations as possible. I am not interested in accidents or uncontrolled circumstances; however, there is an occasional need to make unforeseen alterations. I want to have complete control over the object being produced. The eruption of an uncontrolled element in the object would subject the final outcome of the piece to chance. If my work has room for additional elements, especially uncalculated ones, then the totality of the piece was never thoroughly considered. The simplicity and calculated components of the work reflects its stability.

It is important that my work be visually accurate. Accuracy reinforces the geometry. A geometric format is inherent in my work; so much so that at times, because of its simplicity, the objects seem to be produced without thought. I am referring especially to a piece titled

"Precious and Few." Upon first glance, the simplicity may seem incidental. Often viewers are initially intrigued only by the use of diamonds in the handmade black paper and fail to realize that there is more to be seen. There is a relationship between the sizes and spacings of the diamonds to the paper and its environment. Perhaps even more obvious is the contrast of color: the presence of all colors of light in the diamonds and the presence of all colors of pigments which make up the black paper. There is also a great contrast in the hardness of the materials. Diamonds are one of the hardest of all substances and apparently have a long life, while paper, on the other hand, is one of the softest substances and tends to have a short life span. The visual accuracy of the components reinforces their total alignment. In my work, if one component is visually inaccurate, that element may appear to be a mistake and weaken the total visual structure. However, it is possible for inaccuracy to reinforce geometry. If the inaccuracy is intentional, then it must be obvious to the viewer. That is, the contrast can be subtle, but must not look like a lack of craftsmanship.

A sense of preciousness is important in my work. We all have things that are special or precious to us and I often try to create objects with this feeling: preciousness bordering on preservation. The idea of creating an object that is precious or historic or one that will be preserved in time is an expression of our desire for immortality. I often use a material that has a long life span with a material that has a short one, such as gold and paper or diamonds and paper--the timeless and the lasting with the throw-away. Eventually one of the materials will begin to deteriorate and the other

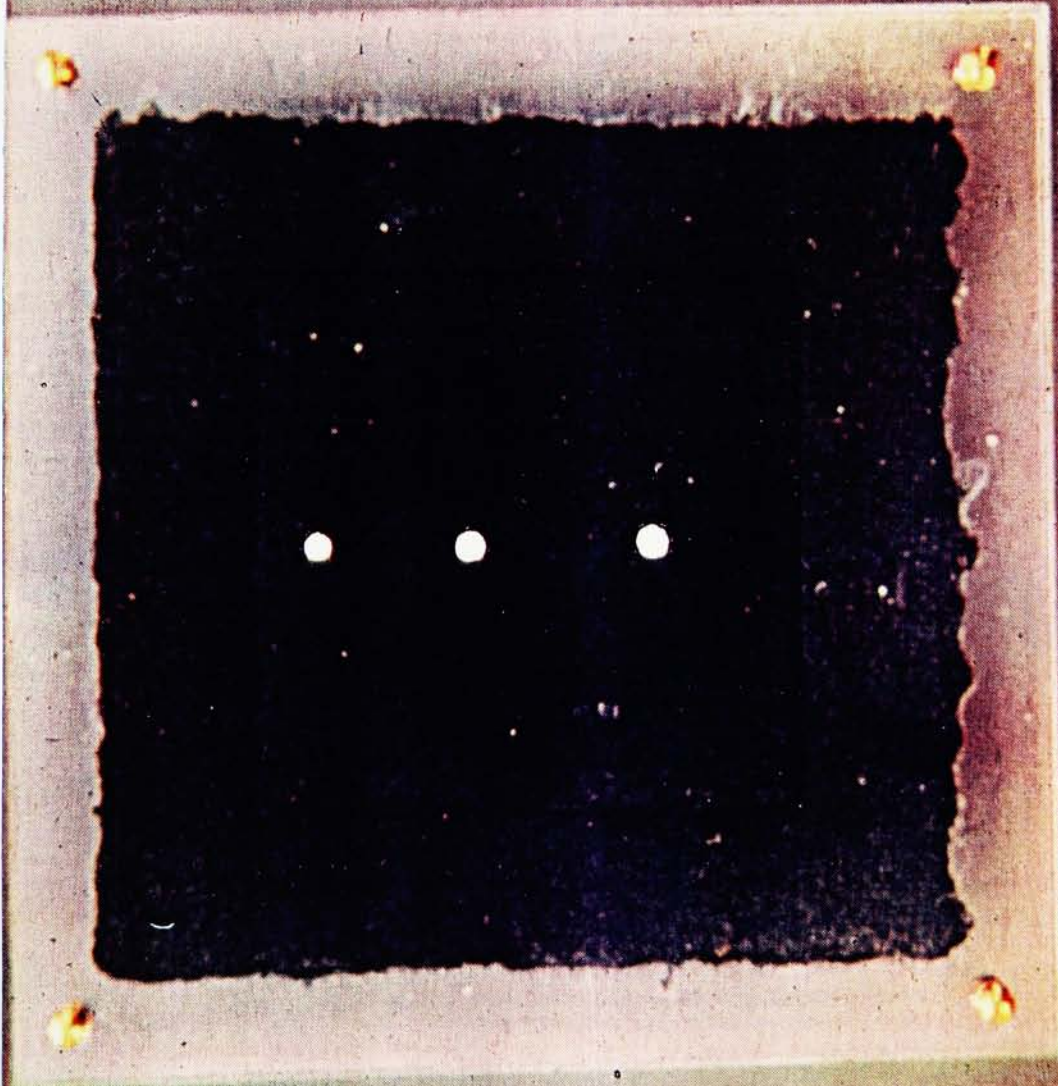


Fig. 22. "Precious and Few," Embossed handmade black paper with three diamonds

remain untouched by the passing of time. I feel this will reinforce the sense of the eternal possessed by the more permanent material. I use a clear plastic to encase the image and protect it from outside influences. A sense of preciousness is reinforced through this method because the underlying elements cannot be touched.

Our culture demonstrates a great interest in the historical, in preservation, and in restoration; yet, there is a counter interest in creating the temporary and throw-away. We are in a sense reacting to old values, tearing down the permanent, and replacing it with the temporary. The concepts of preservation and creation both intrigue me because they parallel my concerns for the immediate and distant future. I make jewelry that combines the permanent and the temporary. I also make jewelry that lasts indefinitely and would also like to make jewelry totally of paper that could be worn today and thrown away tomorrow. I am interested in the permanent and the temporary for two entirely different reasons. There is a need for fine quality jewelry made of lasting materials which will withstand years and years of wear. On the other hand, I feel strongly about the need for well designed jewelry that is very inexpensive, such as costume jewelry or my paper jewelry. This would not only make the jewelry affordable, but attractive to the masses. A person could wear it for a season or until it wore out, and then throw it away.

The metropolis is a strong influence in my work. The presence of a total environment is powerful with its architecture's soaring verticals, repetitious horizontals, and occasional diagonals set against the constant motion of its inhabitants' activities. The city has always been a part of my life, and after living in New York

City for three years, I became fully aware of the ever-changing life of the city--over a million people in motion, going about their daily business on an island of relatively stable monuments.

My metalworks are small, self-contained environments in themselves. They are composed of parts that interact as a total. The completed image is made up of the process, materials, and underlying format. The image is the complete package. It is a graphic representation of a visual impression I received from nature, architecture, a geometric form, or any combination thereof. It is my imitation of a mental picture created through my choice of materials and processes. The purpose of these environments is that they be displayed as either wall pieces, jewelry, or a combination of the two.

A major resource for my current work has been my training in the graphic design field. I want to use my knowledge of graphics in my jewelry making. After spending two months at RIT, I was primarily involved in making metal jewelry with a graphic orientation. The idea of wearable prints came to mind. I realized that paper and printmaking had been isolated from my jewelry until this time. This was a turning point in my work because I realized there was no reason to treat the areas as two entirely separate art forms.

My first print brooch was very eclectic. I used an intaglio print, ruby, plastic, and metal. It was a first step in the right direction even though I hadn't quite united the elements to work as a totality. At that point, the first print brooch was naive and literal

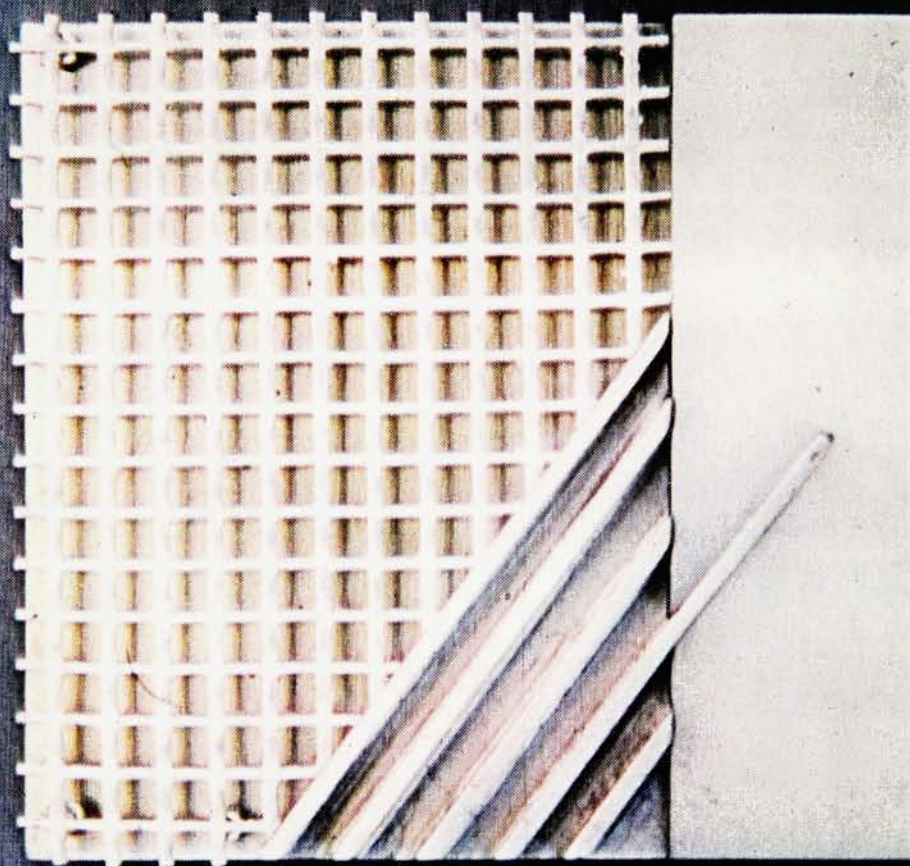


Fig. 23. Constructed brooch of delrin, sterling and nickel silver

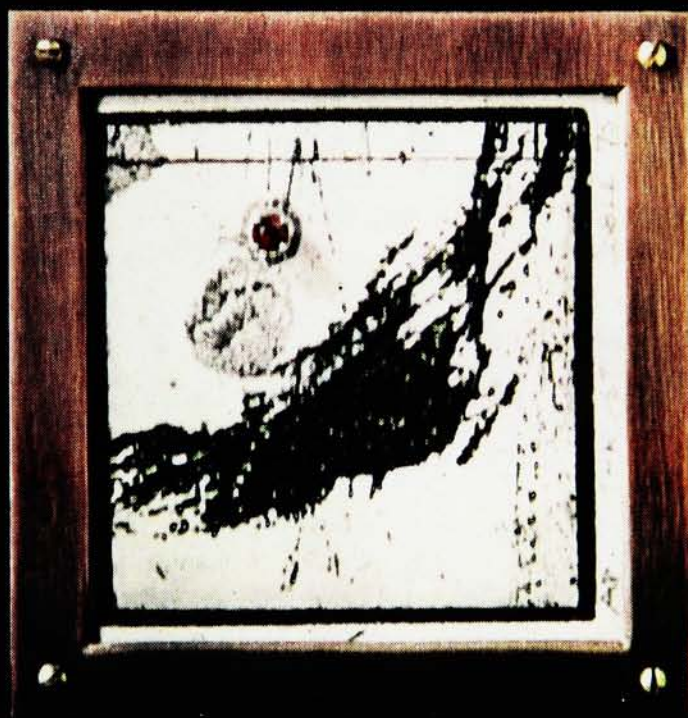


Fig. 24. Intaglio print brooch with ruby

because I limited myself to making a reduction of the ordinary framed print. The second print brooch also used a stone, print, plastic, and metal; however, the approach was different. I eliminated the frame-like effect and let the four-color, black on black silkscreen print with a piece of onyx create an environment of its own. It was much freer than the first attempt. The metal was used for functional purposes. I used a hanging device with a dual pin system which became the physical link between the jewelry and the background. All of the brooches were lightweight and small enough to be worn comfortably.

The wearer of jewelry has the chance to experience holding the object, viewing it in any manner, and then displaying it so that others may appreciate it. The wearer becomes a mobile museum.

My jewelry is intended to be attractive, decorative, wearable, and even convey a message. The message I want to convey with my jewelry and wall pieces is that of simplicity and order along with the concepts of the permanent and temporary. The idea of simplicity and order is my way of creating an object as part of a highly technological and political culture. I try to create order out of chaos and simplicity out of a labyrinth. In this diverse world, some people need the fast and temporary--things exemplified by our throwaway products and fast food markets. On the other hand, people are also concerned with the everlasting--the need for things like enduring religions, indestructable materials, preservation, and all else associated with the concept of longevity.

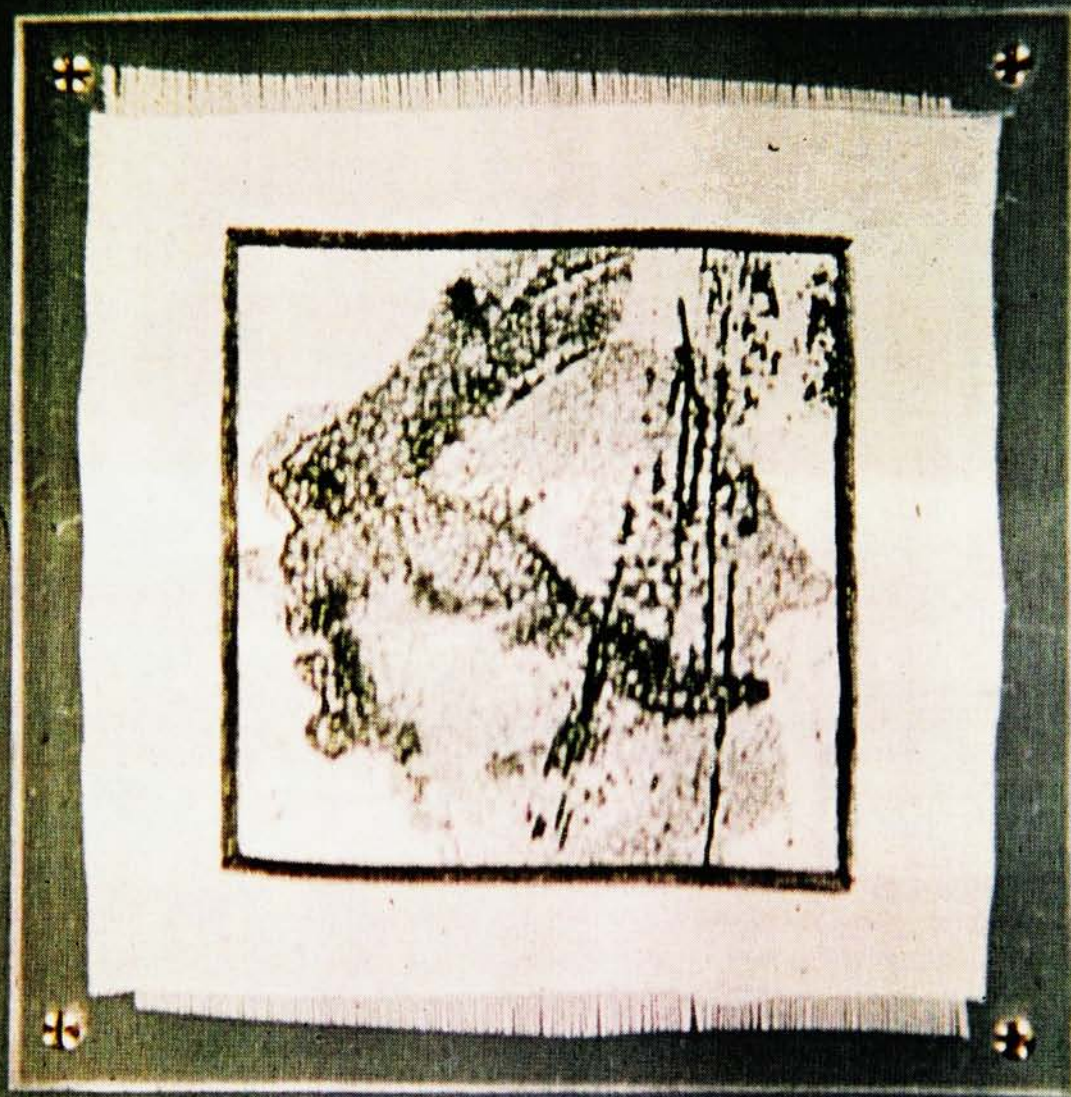


Fig. 25. Brooch, intaglio print on silk covered with acrylic

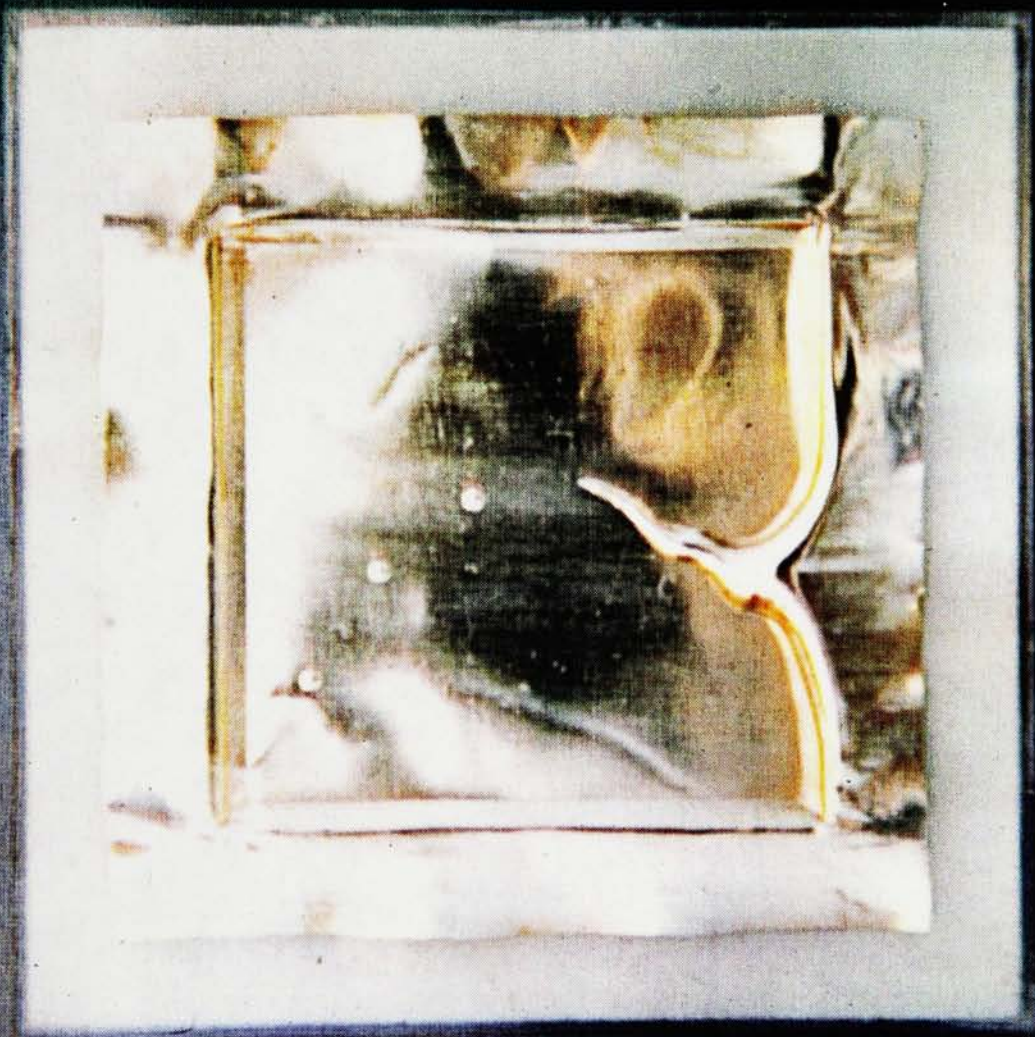


Fig. 26. Brooch, embossed gold with acrylic frame

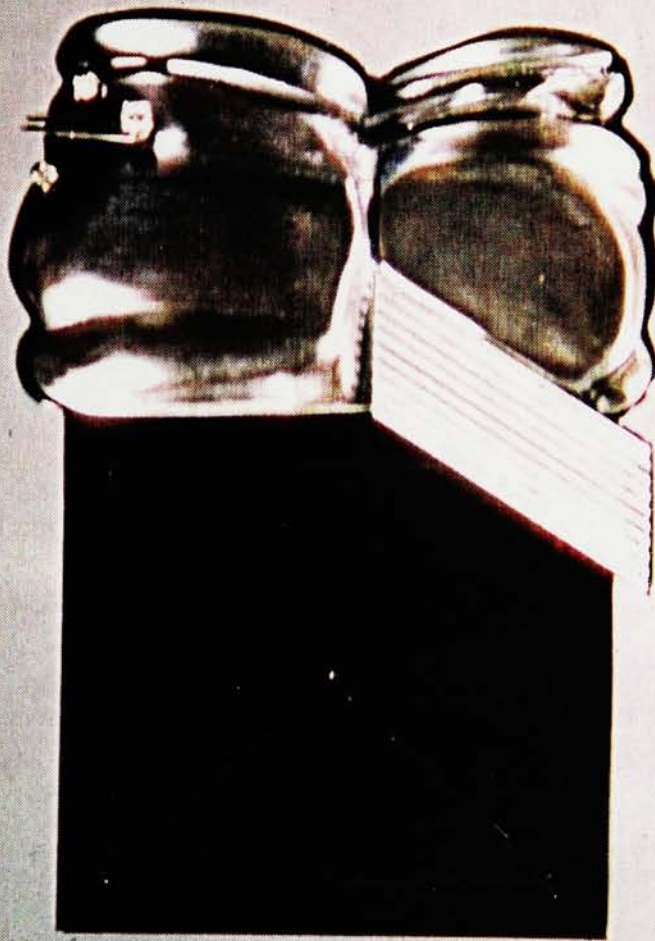


Fig. 27. Brooch, chased silver, acrylic, aluminum, diamonds

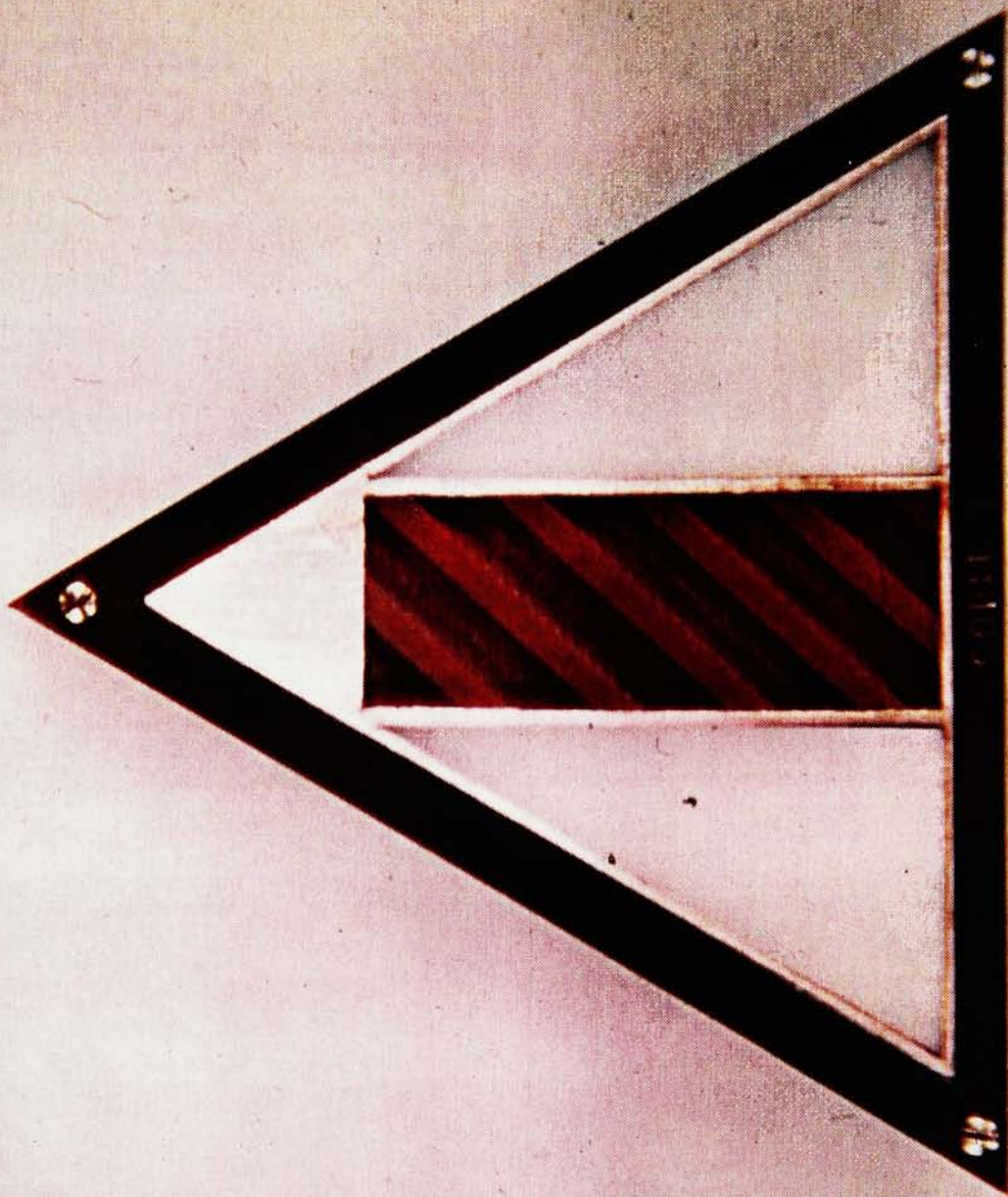


Fig. 28. Wall piece of acrylic and bronze

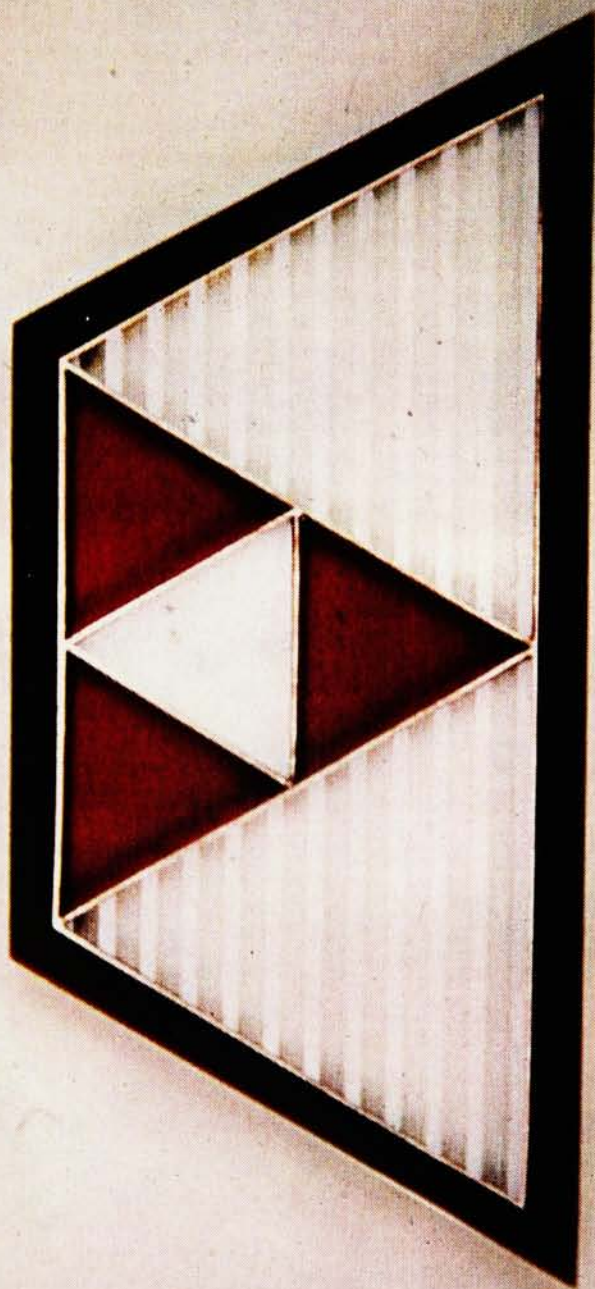


Fig. 29. Wall piece of acrylic and bronze

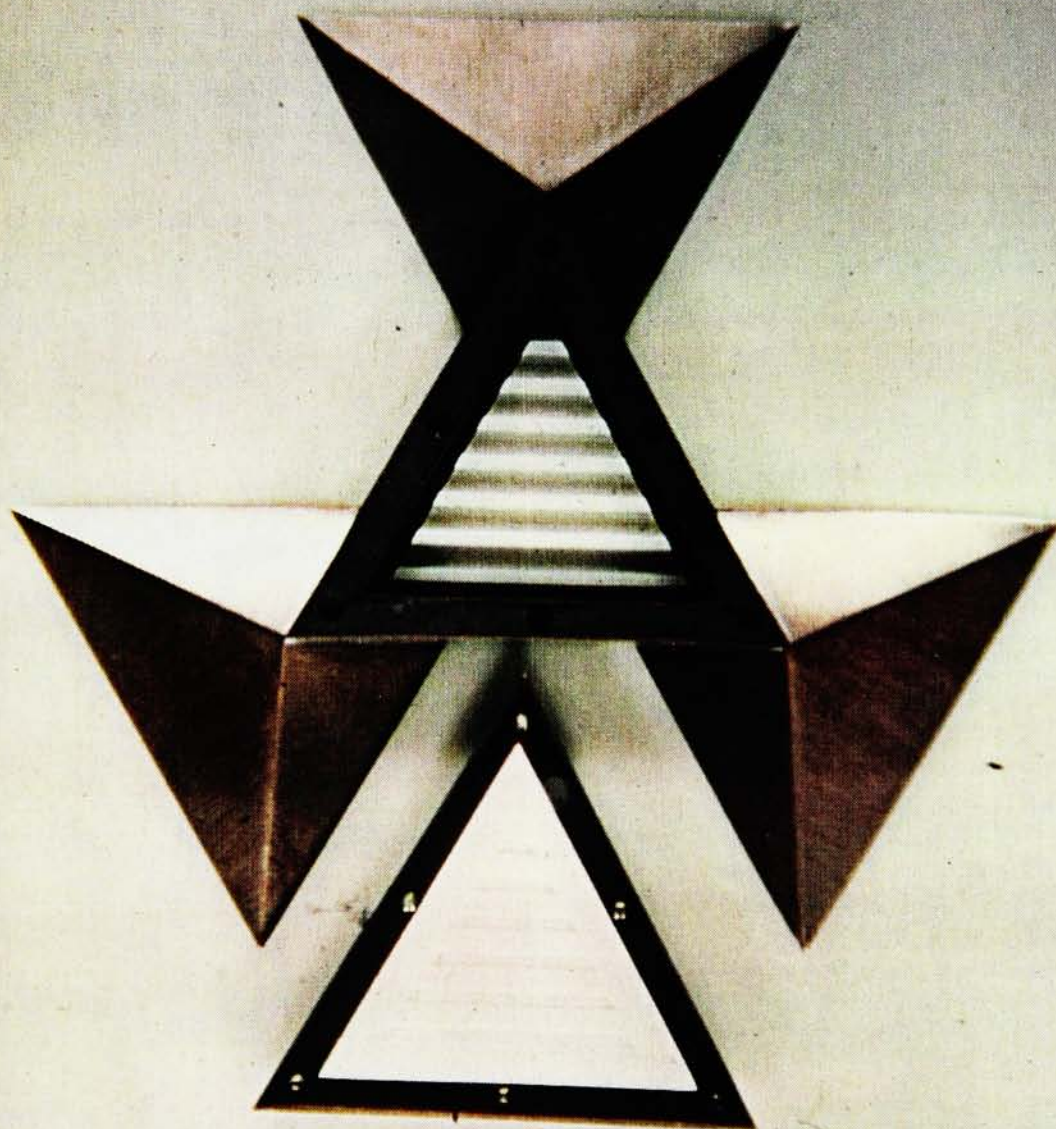


Fig. 30. Wall piece with removable paper and bronze brooch

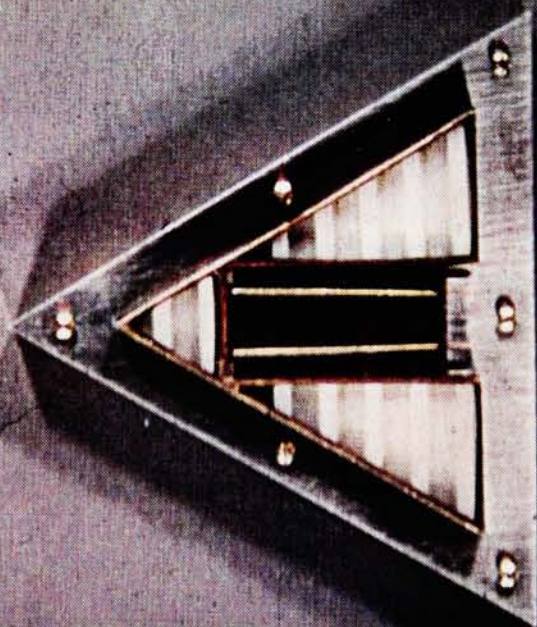


Fig. 31. Back of brooch, Fig. 30, acrylic, paper, steel, and bronze

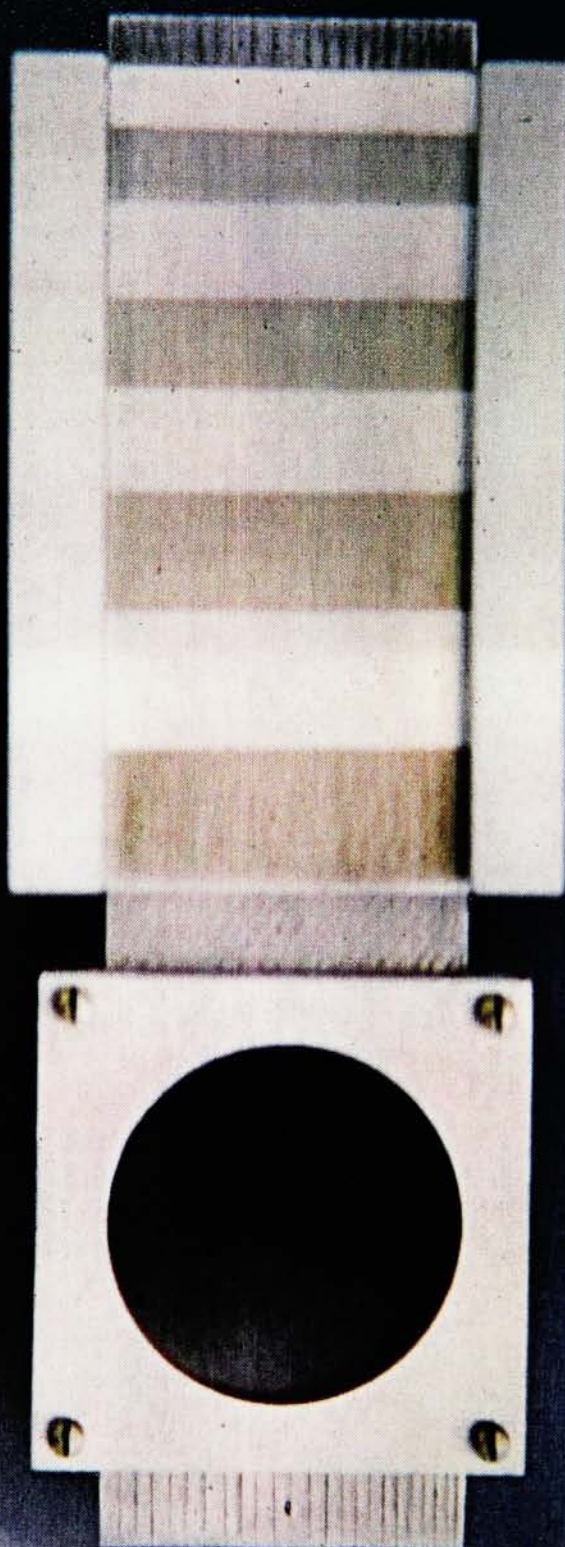


Fig. 32. Brooch of delrin, acetate and nickel silver