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# Metal as a Decorative and Structural Element in Wood Sculpture

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METAL AS A DECORATIVE AND

STRUCTURAL ELEMENT IN WOOD SCULPTURE

(TITLE)

BY

Gordon F. Disharoon

**THESIS**

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TABLE OF CONTENTS

# INTRODUCTION

Wood sculpture is a very ancient art form. For centuries wood has been used for decorative and utilitarian objects. The oldest wooden pieces are carved idols. Ship figure heads of the 18th and 19th centuries are in this category also.

Today wood sculpture is still all of the things of the past, but it also has been altered to pure abstraction. A variety of new tools are now used to speed up the process of carving and to gain special effects.

Wood sculpture of the past was basically carved from a round log form. Today, a sculptor may laminate several pieces of wood together to gain new shapes. The end result may, in no way, resemble the log or cylinder form.

Not much wood sculpture has survived from the past because, unlike sculptures of stone or bronze, wood deteriorates very quickly. This is unfortunate because more than likely some very handsome and valuable pieces have been destroyed with age.

Modern technology has given wood sculpture new life. The use of power tools has greatly increased work-ability. For example, a chain saw can do, in a matter of minutes that which used to take hours. Drying kilns make fast work of curing and drying wood which earlier took three or four years.

I started carving wood in 1972 and it has held my interest since. The application of metal (copper) started at the same time. The first piece was successful, in that it was something new and inspiring and offered many new possibilities for enrichment of sculpture.

With the beginning of graduate studies, I continued to combine wood and metals. The continuation of these materials was not a copy of undergraduate work, but a new idea. The use of the copper as an extension of the wood sculpture, was at the time the most obvious direction for me to take. An investigation of various possibilities of wood and metal combinations seemed to be a valid and meaningful project for graduate studies.

## HISTORY

Numerous volumes have been written about the history of wood sculpture. To even write about a particular aspect of style would fill several volumes. This section will be very brief and about few people.

Barbara Hepworth is probably the greatest influence in my work. Her style and treatment of sculpture are very dynamic. Her use of the pierced form and the very smooth, polished surfaces has had the most influence on my work.

One of Ms. Hepworth's greatest contributions to modern sculpture was the inclusion of the hole. She first pierced a piece of sculpture in 1931. This was done before Henry Moore used the hole a year later.

Another great artist who has had some influence on my work is Constantin Brancusi. The ultra smooth surfaces of almost all of his work holds the viewer in awe that a surface can be treated so delicately. This treatment of materials had a very influencial effect in this study. Examples of this fine finish are The Sorceress, The Cock and Torso of a Young Man, to name a few.[1]

The pierced form gives a whole new dimension to sculptural form. The hole encourages the viewer to follow through to the other side. It can be a focal point to a work. Being able to see positive space within the work and negative space moving through it is a very exciting feature of sculpture. Barbara Hepworth treated the hole with a very fine sense of rhythm. In almost every sculpture she has pierced the form with a hole creating movement within it. The

negative space is very active in that it has movement and shape. Viewing any of her pierced forms indicates this. Each hole has a definite movement going somewhere.

To say who is the better artist would be a dangerous statement in any circle. Each artist mentioned here has his own style. Mr. Moore uses a more figurative form than Ms. Hepworth. Brancusi was a master of both.

Of the three sculptors mentioned here, Barbara Hepworth has had the most influence on me personally. Her forms are very complete. Her abstract form has a greater influence on my work than the figurative form of Moore and Brancusi.

## CHARACTERISTICS

The general characteristics of all woods are basically the same. The grain goes one way to the middle of the log. Walnut has very good carving qualities and density allowing an extremely smooth surface to be developed.

My reasons for using walnut are the way it carves and its color. Color is very important in any sculpture, especially that made of wood.

Each piece of wood has its own personality and idiosyncrasies. Some of the peculiarities can be very troublesome in that one can get into trouble if one doesn't understand wood. In carving with a gouge wood can be peeled off nicely or it can be splintered off, depending on which way the gouge is directed. The splintering can bruise the piece and cause deep flaws. To deal with a piece like this, the direction of cut must be changed in the middle of the log. Failure to do this will result in a lot of damage of the piece.

Other characteristics of wood are the positive and negative forces. When carving on a log the material that is removed is negative space. This space can be very shallow or very deep depending on the effect, the piece and the person.[2] This space reacts with the tangible (positive) and the intangible (negative) to create a pushing and pulling force-field much like that created by the poles on a magnet. The negative space in a piece of sculpture is just as important as the positive space. This theory was thought out as one force balancing the other in the finished piece. This does work in the

creation of a piece because the positive and negative space work in relation to one another.

Another important characteristic of wood sculpture is the sculptor's direct relationship with the wood itself. There is an emotional involvement with a piece of wood that is being worked on. It has a color, texture, smell, etc. and these factors are of great importance in the forming of a sculpture. One can get to know how the piece is going to carve when he develops a total involvement with it. One should allow a piece of wood do a lot of the work, that is, letting the sweeping grain move within the piece. This is done because the grain has a natural beauty and rhythm, therefore it should play an important part in the finished product. These natural grains have a feeling or vision that will reflect the artist in the piece.

## TECHNIQUES

Although there are probably as many different techniques as there are types of wood sculpture, there are a few rules to follow.

First, select a well seasoned log to get a nice finish and prevent cracking and checking when the piece is finished. This is not mandatory but it can give one a better outlook on the whole piece.

After removing the sap wood from a piece of walnut, general lines drawn with chalk can be very helpful and gives one the proper perspective. When one has completed the preliminary steps, one can begin on the area to be removed.

The mallet weight should be coordinated with the size work to be done. A mallet that is too light or heavy will not be effective for the end result. When using the gouge one should be sure to hit with the grain in order to peel the wood and not tear it.

Some sculptors like the marks left by the gouge. This texture is not just the marks left by general forming, but a very controlled surface that is attained by carefully gouging the texture in the piece. This takes both patience and practice. Other methods are removing wood with a torch, burning parts of the log away to get an interesting effect. Other textures are made with different tools, either purchased or made. The varieties one can develop are as vast as one can imagine. Into these textures, one can rub stains or even paint to get interesting effects. The application of copper or any other metal to a surface has a very interesting effect. The method used is first, put a texture into the wood with a small gouge, then hammer the copper over this surface.

The silver wire was inlaid into the natural cracks of the wood held there by small silver nails soldered onto the wire, and then hammered into the wood.

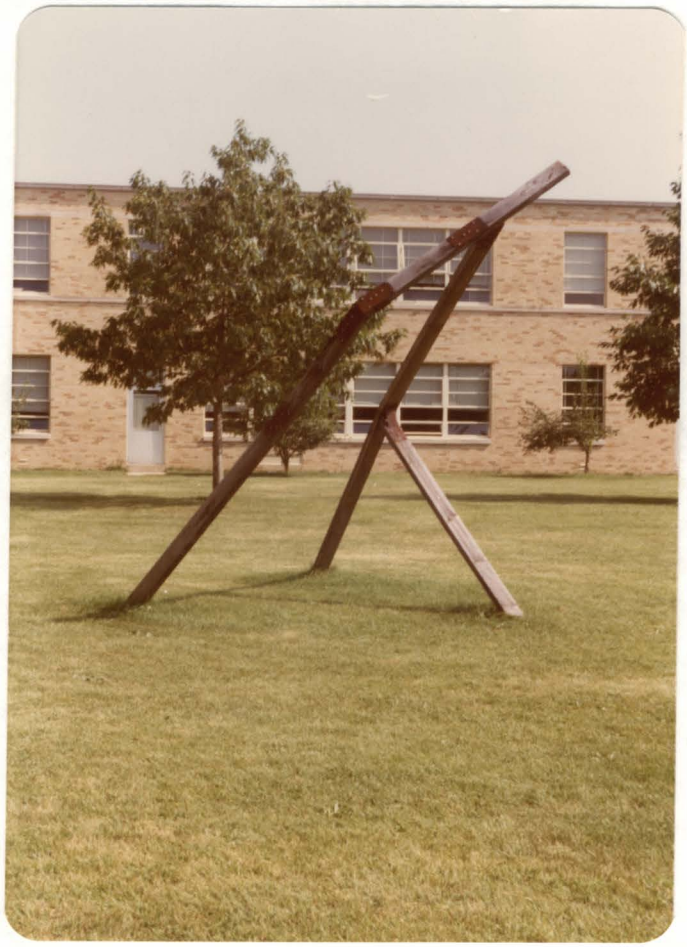
## SERIES OF WORKS

### OUTSIDE PIECE

The need to gain a new three-dimensional perspective was satisfied by the creation of this rather large scale piece. It offered interesting problems because it was large in scale and because it was a new facet to the problem never encountered before! The planks were joined together by metal. The end result deals with negative and positive space and the use of metal as a structural element.

Some planes worked out better than others. Planes A and B compliment each other. Planes C and D are awkward. They are at an awkward angle and make the piece look like it is going to fall over. To counteract this, metal rods were driven into the ground. A solution to this problem would be to re-position planes C and D so that one plane could be supporting planes A and B. This solution would solve the problem instead of offering resistance to planes A and B.

While this piece did not work well, it did bring meaning back into my work. The effects of sunlight with the shadows that the piece casts do add some good qualities. The movement of the source of light also introduces a kenetic element.



## WOMAN TESTING THE WATER WITH HER GREAT TOE

"Woman" was an extension of my undergraduate work. The extension was a big move and an obvious one. The wood, a remnant of a larger log, posed a few problems. The first bit of trouble was the large trunk with the smaller piece branching off to one side. The obvious place for the copper was the larger branch of the log. The copper that was used in this piece was much heavier gauge than that used before thus posing a few problems. More time was required in forming the copper and I had to discipline myself not to hurry. This was a good exercise in that it forced a step in a new direction. This new direction did not work out as desired because the transition from the wood to copper is too abrupt. The wood has a soft silky texture and the metal has a very cool and hard texture. The metal is too awkward on the wood and in looking at it, there is a definite line breaking across the sculpture that separates the wood and copper. In other words, the transition is raw and abrupt.

One possible solution for improvement would be to extend the copper further down the back of the wood and break this line. The application of the metal piece is not in sympathy with the rest of "Woman" either. The use of brass screws tends to interrupt the desired rhythm. The use of brass escutcheon pins would have been much more subtle, if a judgment can be made from later sculptures that are more successful.

## FUNNY HAIRED LADY

This is the second sculpture in this series, and has the same basic problem as the first. The "Funny Haired Lady" is smaller and somewhat less bulky that the first. The line is more or less a sweeping curve much like a woman walking with a rather light dress on.

The wood in this piece lends itself better to the application of copper as it is not as big and doesn't dwarf the copper. The welded copper extension on the top offers more control and is a bit more visually pleasing. Again the problem of gaining control over the material is the main problem. On the whole I feel this piece was the most successful of the four in this series. It was unfortunate that the wood was not completely dry because after applying the finish I discovered the log had only been partially seasoned and the grain raised.

This piece is partially successful. There are some problems with the metal that experience can correct. The color, attained by heating the metal and applying liver of sulphur on the surface, tends to reduce the contrast and develop a smoother transition thus allowing a free visual flow. The very basic wooden form seems to support the total configuration. It seems a completely successful solution. This work is more simplified and in the end, more visually successful.

UNTITLED

This work was born from a split burled section of walnut. This wood has a very hard grain that runs in a number of directions that contributed to carving difficulty. When split it had a very "cube-like" grain down the center. It was decided to leave the rough texture on part of the piece because of its richness of texture. Therefore, it was decided to add some more texture on one side of the piece to effect a little more balance.

Although the total form seems somewhat awkward, the copper is better crafted. Its treatment seems to develop a color and texture which adds a more sensitive relationship to the wood. The amount of copper in proportion to wood is less overpowering which adds to the sensitive relationship. Copper foil was re-introduced at this point to destroy the "harsh-line" effect and, thereby create a more satisfactory transition. This piece seems to make the best use of metal as a structural element as far as this experimentation has gone.

BOAR HEAD

After much thought and discussion, the decision was made to discard the structural aspect, and return to the use of metal as a decorative element.

For better control over material and a greater color contrast, it was decided that silver would be a logical next step in the development of wood/metal sculpture. It was decided to put silver wire into cracks of the wood which should enhance the contours of the form and add a new textured interest.

The first piece in this series of walnut with silver had an interestingly figured grain and an effective pattern of cracks. The decision was made to pierce the piece because first, there was a rather bad spot at the top where the wood was rotted, and secondly, I had been wanting to pierce a piece since 1972 when I did one and it failed. With more experience by this time carving the hole was not as big a problem. The position is correct and the natural canyon on the flat plain works well into the hole. Because of the flat plain this sculpture has a new and refreshing appearance.

The introduction of the silver works well because it becomes part of the surface. The silver wire was measured for each crack and small silver nails were soldered to each wire. Small pilot holes were drilled for these nails and the silver was pounded into the cracks, then sanded smooth with the surface. The treatment of the wire on "Boar Head" forces the viewer around it, making it truly a sculpture in the round.

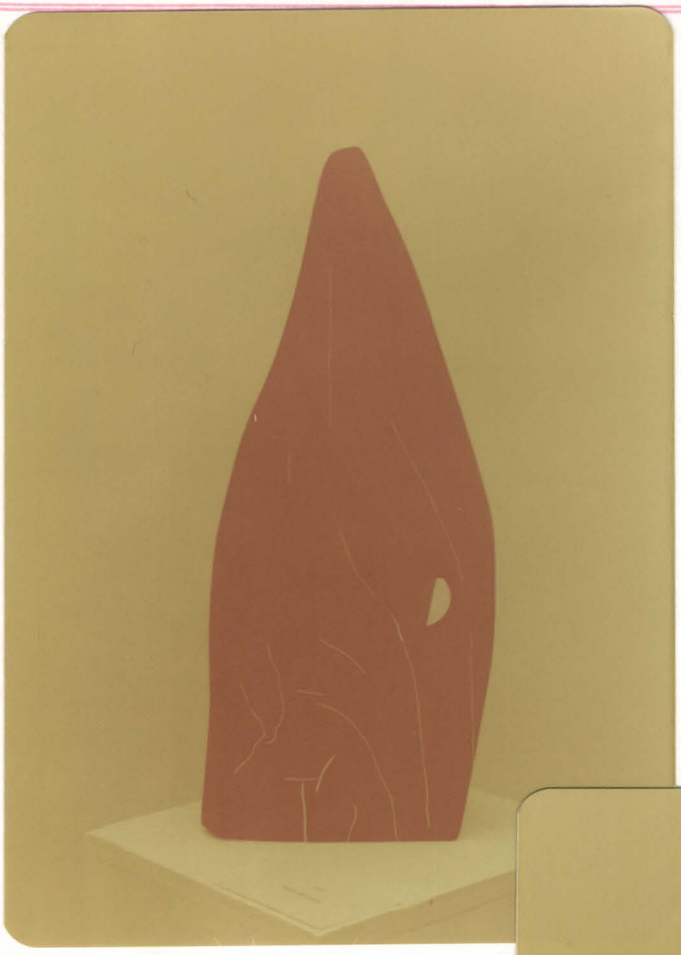
DUCK

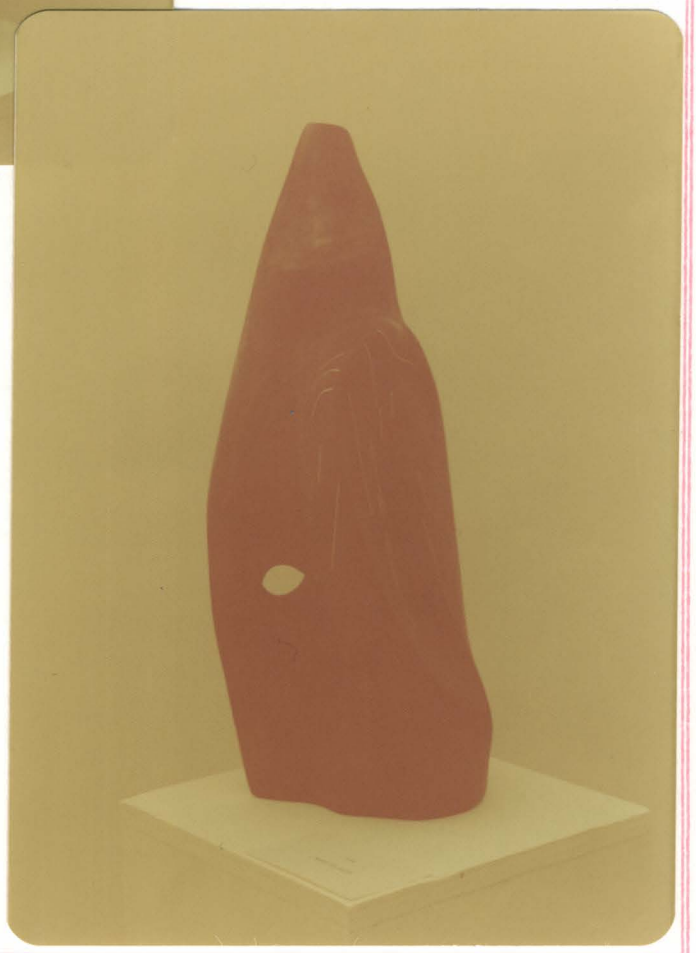
The second piece in this series was more successful than the first. The silver wire was more successful and is not as awkward and the ends of the wire were filed to points for a more complete flow.

The hole in this piece was bored with a one inch bit. The hole was placed in this spot but not out of necessity as with the first in this series.

The flat plain was again used on this sculpture. This was used successfully on the first piece with the silver wire and it was decided to use it again. The burled grain in this wood permits me to use a flat plain because the grain itself has a lot to do with the finished product. This piece has an uplifting movement as opposed to the first which has a more or less horizontal movement. This sculpture is more successful than the first in this series because the hole was deliberately planned and placed, therefore it works very well in relation to the rest of the piece. The silver works better on this piece in that it is more uniform in size and more deliberately used than on "Boar Head." The total form resulting was more satisfactory because the wood itself was in better condition.

In conclusion, "Duck" works. It has good form and the hole contributes to a strong feeling. It also fits the title.





## REFLECTION OF ONE'S SELF

Upon conclusion of "Duck," I decided to tackle a new problem. I wanted to give myself a task that I had not faced before and that would be more challenging than a sculpture consisting of just one piece of wood.

After obtaining a rather large carving block and much study, the decision was made to cut the wood in two. This afforded the opportunity to create a sculpture consisting of two pieces. To do this, each piece has to have its own individuality, but they must interrelate. By cutting a piece of wood in two, the task of developing an interrelationship is easier.

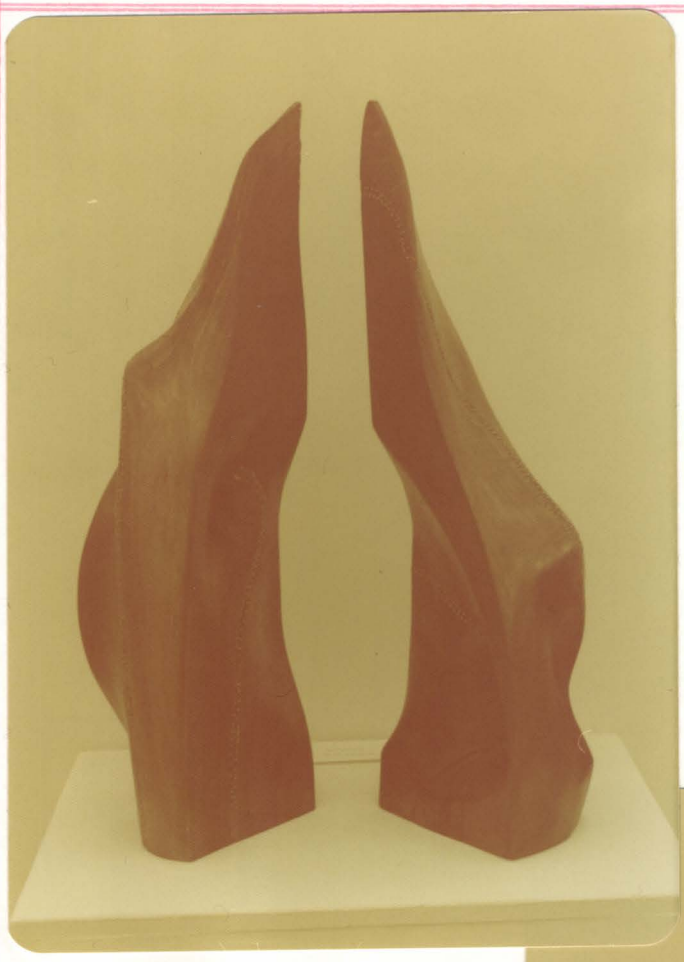
This is a very good problem in that work on each piece had to develop in unison in order that satisfactory relationships would result. This was indeed a problem since this was a new experience. Each piece was worked to a certain point. Finally the two pieces were placed together which made the final creation of the detail much easier. This allowed the two units to interrelate much more effectively.

The finished product works well. The flat planes are just enough, compared with the rounded surfaces, to keep the movement of the two pieces flowing and, most importantly, develop active space between the two pieces. This negative space has very active forces interacting and flowing between the two pieces, thus holding them together.

The application of metal was a slight problem also. This piece of wood cured slowly at the saw mill and therefore had very few

cracks in it. This lack of cracks did not enable me to put silver in these two pieces. There simply wasn't enough silver to carry the two pieces together. It was decided that, instead of using the copper in decorative manner, as was used before, I would utilize the grain structure. This application was well planned, small strips of tape were cut and applied to different areas to get ideas of the placement of the copper, to draw the two pieces together. The copper was applied by putting a texture on the wood to get the effect of highs and lows with the metal. It was secured with the brass escutcheon pins the same as before. The same process of coloration was also used. The liver of sulphur makes the surface much more muted and warmer, thus decreasing the contrast with the walnut. This coloration was also used for the effect of the high and lows that were desired with this texture.

This is the most successful sculpture I have done to date. The copper lends itself much better to the walnut than the silver. The silver is a little too harsh of a color contrast with walnut, but may work well with another wood, perhaps cherry. These two pieces flow together in varying positions and with different distances between them which is exactly what was desired.



TWO PEOPLE (ONE WITH FRECKLES)

Again, wanting to develop the two piece sculptural form, an old walnut barn beam was used. This beam had been worked previously with a different idea. Superimposing a new concept made it necessary to cut the beam in two in order to develop the forms that would work together. Originally, the smaller piece was to be turned around, but looking at it I decided to leave it where it was. In the original position it was awkward except in a full frontal view. In its present position, the space between the two pieces takes on a form. Again the negative space plays an important part of the total structure.

When looking at the two pieces it is obvious that the taller piece is stronger than the short one. In fact, the tall piece could stand alone for a single piece, but with the introduction of the smaller piece a very effective interrelationship results. These two pieces work well together and the treatment of the brass contributes to the sense of unity and enhances the form and color.

Brass was used because it had not been used before and it was felt that it should be included in the experimentation or solution to the problem. Brass is somewhat more difficult to work with than copper, the texture and color were developed before it was applied to the wood because the chemicals needed to color it would harm the wood.

This piece is successful even though the taller piece is somewhat stronger than the small one. The two pieces work much better together than either one by itself.

The solution used was caustic soda and copper carbonate. This solution proved to be very unstable. One time the color was very

rich on the metal and the next time almost no color at all appeared. In the future heat treating will be used for more color uniformity.

JUPITER

This piece of sculpture was primarily experimental. First of all, cherry had not been used until now. Secondly, this piece was a plank only two inches thick. The first thought was to make a wall relief out of it because of its thinness.

Looking at the piece and seeing the fine grains on both sides, it was decided to make it a standing piece. The quality of cherry is very brittle and the wood chips off instead of peeling off. Cherry is much more difficult to carve than walnut and is more prone to chipping than walnut. Cherry is also unpredicably more full of cracks and rotted spots than walnut. However, it finishes easier than walnut.

It was decided to put lead into the cracks of the wood. This was to be done by building up a clay dam and heating solder (hard core), melting it and allowing it to flow into the cracks, then sand it with the surface. I first tried a test piece and this method didn't work. First the wet clay exploded when the heat of the torch hit it. Next was the solder, which did not melt very fast and the sample piece of wood burned too badly for this technique to work. Possibly the solder did not have enough lead content and melted at too high a temperature. Perhaps it should have been melted in a crucible. In a fall a piece of wood was broken off, and a copper plate was fastened to one side to give it more three dimensional character.

This re-introduction of a structural element of metal completes the circle and my original thesis statement. The copper plate becomes part of the structure and is a structural aspect of "Jupiter."

"Jupiter" is successful in that the copper form with the rods adds to the roundness of the piece and takes the flatness out of it.

## CONCLUSION

In conclusion, some of the work in this program was a success and some not so successful. The first series with metal used structurally were not as successful as later pieces but the learning process was put to good use, it was obvious that this was not the right direction. The series in which metal is used as a decorative element added to wood sculpture is very successful. The early series points out that, even with some extended time put towards a direction, in the end it will not work out. The work that developed in undergraduate work seems to have been pointing in the right direction. By no means will I stay in the same rut of one kind of material to incorporate on wood sculpture as I did in the past. I will not continue to use one kind of material with wood since I have learned that change is of paramount importance to a sculptor.

## FOOTNOTES

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V. C. Connor, Polystyrene and Urethane Foams in Sculpture.

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## LIST OF COLOR PLATES



Photography by Garret W. DeRuiter