

CREATIVE USES OF WOOD IN THE
PRIMARY ART CURRICULUM

APPROVED:

Rudolph A. Fuchs
Major Professor

Reginald J. Hinely
Minor Professor

Mack Vaughan
Director of the Department of Art

Robert B. Toulouse
Dean of the Graduate School

CREATIVE USES OF WOOD IN THE
PRIMARY ART CURRICULUM .

THESIS

Presented to the Graduate Council of the
North Texas State University in Partial
Fulfillment of the Requirements

For the Degree of

MASTER OF ARTS

By

Jane E. Swenson, B. A.

Denton, Texas

June, 1967

TABLE OF CONTENTS

	Page
LIST OF ILLUSTRATIONS	ii
Chapter	
I. INTRODUCTION	1
Statement of the Problem	
Purpose	
Procedure	
II. HISTORICAL REVIEW OF THE USE OF WOOD IN THE UNITED STATES OF AMERICA	3
Wood Construction in the Primitive Cultures	
Wood Construction in the American Folk Arts	
Wood Construction in Contemporary American Arts and Crafts	
III. A PROGRAM FOR THE USE OF WOOD IN THE PRIMARY ART CURRICULUM	26
Preparation of the Material, Equipment, and Physical Arrangement	
The Activities of Designing and Working with Wood	
Assemblages	
Constructions	
Modeling and carving	
Collages and mosaics	
IV. CONCLUSION AND RECOMMENDATIONS	51
Results from This Study of Children's Art	
Experiences with Wood	
Suggestions for Further Study	
BIBLIOGRAPHY	55

LIST OF ILLUSTRATIONS

Figure	Page
1. The Wood Bench	29
2. The Work Area	30
3. Temporary Assemblage	34
4. Decorative Assemblage	34
5. Permanent Assemblage	35
6. Non-objective Construction	38
7. Painted Construction	39
8. Unpainted Construction	39
9. Free-form Green Saplings	40
10. Bent Wood Splints	41
11. Cut-out Form	43
12. Carve-out Form	44
13. Carved-and-constructed Baseball Player	44
14. Carved-and-constructed Cowboy	45
15. Collage in A Shadowbox	48
16. Relief Collage	49

CHAPTER I

INTRODUCTION

Statement of the Problem

Wood, having been a significant material in man's cultural and technical growth throughout prehistoric and historic times, may also be a useful material in the cultural and technical growth of children. The problem in this study was to present to children of the first three grades at Rufus C. Burleson Elementary School, Dallas, Texas, a series of art activities with wood through which children may be brought toward a greater consciousness of design, and in which many different uses of wood employing only the simplest tools were examined during the school year of 1965-66.

Purpose

The purpose of the experiment was to include within the year's art program more creative activities involving a variety of woods ranging in hardness and softness, textured and patterned surfaces, and natural and milled forms. The use of wood with older children in the art programs of various other schools is evident through investigations made in past issues of School Arts and Arts and Activities, two of the professional art education magazines, but in the primary grades it is obviously neglected. Wood has not been completely

omitted from the primary art curriculum, but neither has its limited use been particularly concerned with employing the many varieties in which wood can be found, or acquired at reasonable costs, nor in discovering simple uses distinctive to the character of wood.

Procedure

The study began with a consultation of books and current professional periodicals for the purpose of gathering information about creative activities with wood from the philosophy of art education, general design and activities for children, wood technology, and history of woodworking. It is hoped that, with the composite of basic information on wood in this study, research needed for future planned activities with this material in the elementary grades will be reduced.

The location and collection of varieties of wood from local and practical sources was a part of the total experience for both teacher and children. The varieties that were found were used in the activities designed for seven sections each of the first, second, and third grades at different intervals during the school year of 1965-66. Some of the children were eager to help refurbish the "wood pile" at different times of the year as it was needed. The amounts of wood collected varied as the sources, and the types and quantities needed for the activity in process varied.

CHAPTER II

HISTORICAL REVIEW OF THE USE OF WOOD IN THE UNITED STATES OF AMERICA

American woodcrafts in the history of the United States are included in three distinct areas of American art: primitive art, folk art, and contemporary arts and crafts. Each of these areas is distinguished respectively according to geographic location, cultural influences and characteristic expressions. The geographic location of woodcrafts of significant interest among the primitives is noted along the North Pacific Coast; in the Southwest, and north of the Rio Grande along the Middle Pacific Coast; and in the Eastern and Southeastern Woodlands, in the expanse between the Atlantic Coast and the Mississippi River. The cultural influences on woodcrafts of the folk artists are primarily from middle and northern European countries, and from local Indian tribes. Contemporary artists and craftsmen working with wood in the United States express various personal feelings in their works. The location of these individuals is not particularly relative to the characteristics of their work since modern communication and transportation devices have unified the intellectual environment of people.

Wood Construction in Primitive Cultures of the United States

Before the advent of the white man to America, wood was abundantly evident in most areas of this virgin continent and, within the knowledge of the primitive inhabitants, no other material had the specific constructive character of wood. The Indians were instinctive wood-users. While styles and specific techniques varied in different primitive cultures in this country, woodworking techniques such as carving, steaming and bending, incising, burning (for the purpose of hollowing out logs), painting and staining, inlaying with other materials, and making bark a pliable material have been used by some tribes in prehistoric and historic times. The adze, or ax, has been the main tool of primitive woodworkers since prehistoric times, and even with the advent of the white man and the subsequent introduction of metal, it was never completely replaced.

Monumental Carvings, Masks and Boxes of the Northwest Coast Indians

The Indian tribes of the Northwest Coast, according to Miguel Covarubbias (11, p. 109), have the finest woodcarving in America from both an aesthetic and technical point of view. Covarubbias describes them as "unexcelled carpenters" (11, p. 176) who rived planks from great cedar logs with only wedges and adzes, for the construction of enormous houses. Leroy Appleton, describing the woodwork of the North Pacific, says, "Versatile is perhaps the only word for their work with wood. They steamed and bent it; even sewed it. Vessels and boxes of all shapes and sizes were carved with animalistic

figures" (3, p. 9). These same builders who constructed the massive houses and totem poles crafted smaller carvings with the same "sense of balance in forms and proportions" (11, p. 176).

The setting for the monumental carvings of the Northwest is also monumental, as nature has carved out the buttes of the Cascade Range and lifted the magnificent redwoods and cedars. Little wonder why the Indians felt a competitive force driving them to rise above the immense surroundings. The Haida Indians, best known for their totem poles, roughed them out from the felled logs with adzes and finished the details with knives and chisels, sometimes leaving the adze-like tool marks as part of the design (11, p. 181). The Tlingit tribe, best known for their carved boxes, devised a unique manner of constructing a box: first marking a plank into four equal parts, bevelling the three corners to be steam-bent and then sewing the fourth corner together (11, p. 176). The Kwakiutl tribe, best known for their realistic and fantastic masks, had devised

mechanical contraptions to make trick masks with movements controlled by weights, pulleys and strings: fantastic birds that snap their beaks, or split through the middle revealing a human face mask hidden in the interior; masks that open and close their eyes, with removable mouths, or with telescoping noses; and double masks representing a chief in a placid and in an angry mood (11, p. 179).

Paint was applied to most wooden articles. Mineral pigments of black, red and blue (at first the only colors used) were applied with a binder which was the oil from chewed salmon-eggs; the wood surface was given a coat of oil, and pigments were then applied with a cedar brush (11, p. 185).

Small Carvings of the Southwest Indians and
Canoe Construction of the
California Indians

Though clay is the most abundant material used in the Southwest, the Hopi and Zuni Indians still carve their ceremonial figures and dolls from the softwood of the cottonwood trees. Kachina dolls, carved like the masked ceremonial dancers, are made for the children to enjoy and are often enriched with fabric, furs and feathers (25, p. 36). These and other small carvings of religious intent are carved and assembled with pegs, then painted or left natural.

Before civilization arrived in the area of Los Angeles, California, the Santa Barbara group of Indian tribes had developed the art of basket-making to perfection using the roots, bark, fibers, and fern stems from sedge, willow, spruce nut pine, bracken, redbud and hazel, all of which were local to these people (11, p. 195). One of these groups had also developed the construction of canoes to a high degree of perfection (3, 13). According to Appleton, "the Chumash of Southern California made the only planked canoes, building up the sides by sewing strips of wood together" (3, p. 9). The plank canoes of the Chumash were constructed in much the same way as the birch canoes of the North, the difference being that planks were used in place of the birch bark, which was not as plentiful in this area. These hand-hewn planks were sewn together with sinew cords and calked with asphalt.

Canoe construction involved a variety of skills. The method of riving planks from logs was not unique to the Chumash but was used by other tribes. A wooden maul (mallet) made

from a burl, knot or the natural bend of a tree branch, was used to pound the driving sticks (wooden wedges) into the log to be split (1, p. 17). The ribs and framework for the canoe were then prepared for bending. Water was heated to boiling in wooden vessels by dropping hot stones into the water (1, p. 20). The wood to be bent was thoroughly soaked in this boiling water, until bending could begin, then slowly the ends of the wooden ribs were drawn together protecting the point of greatest stress by keeping it in the water or pouring water over it. As the desired shape was attained, thongs tied the bend in place until the wood had thoroughly dried, taking a permanent set. More than the desired bend was required for the ribs of the boat as the wood would spring outward slightly when untied. The Indian's knee, a tree or another object would serve as a matrix around which the wood was bent and then allowed to season. Harder bends were achieved by securing several laminations of the same size together with thongs of inner bark, roots or rawhide (1, p. 21). The Indian knew from experience that the ribs would bend only toward, or away from, the bark side (1, p. 17); therefore the logs were split at certain angles which made possible the direction suitable for bending. After assembling the canoe with thongs, the pitch was applied to all joints. The making of pitch, known to many Indian tribes, was achieved by simply boiling the gum extracted from spruce or certain other evergreens until it became sticky (12, p. 112).

Sculpture and Implements Made by the
Eastern and Southeastern
Woodlands Indians

The recent evidences of these peoples' crafts are wood-carvings sophisticated enough to be called sculpture, and wooden implements of equal grace and simplicity. Appleton declares that ". . .the best sculpture-in-the-round north of Mexico comes from the Mound-Building area" (3, p. 9), the nomenclature given to the North American Woodland Indians. "Delicate and realistic masks and statuettes of animals [have been] found in the swamps of Key Marco, Florida" (11, p. 110). Naturalistic carvings of wildlife have been uncovered there which demonstrate the technical and perceptive skills of the carvers, products of a people whose intentions were to provide objects of necessity for their homes and, moreover, to satisfy a sense of beauty for their lives. Masks, statuettes and utilitarian objects were carved in naturalistic forms of pumas, wolves, alligators, and birds.

The Eastern nations of the Iroquois, Seneca and neighboring tribes, having abundant forests of both deciduous and coniferous variety, made many utensils for the preparation, storing and serving of foods from wood. The wooden pestle and mortar were used for preparing corn: the long-handled, double-ended masher (pestle) pounded the corn in a cylinder (mortar) made from a log hollowed out with fire (29, p. 8). Storage barrels were made of peeled bark sewn together at the seams. Baskets were made from black ash splints. Carved wooden bowls, ladles, cups, spoons and pot stirrers with curved handles for hanging on the wall of a pot were sometimes plain, sometimes

decorated with curvilinear designs (29, p. 9). The masks of these woodland Indians are like sculptured caricatures, having "bold features, deeply grooved wrinkles, and strongly contrasting eye and mouth patterns" (25, p. 17) with grotesque distortions.

Wood Construction in the American Folk Arts

Familiar cultural traditions from European and Indian backgrounds have influenced certain crafts where American populations grew from one or two common nationalities settling together. The Negro slave brought some African art traditions but few examples of woodcraft are known. The woodcrafts done by the untrained people of America for purposes of decoration or utility include ship carvings and weather vanes; religious carvings, toys, decoys, buttermolds and other utensils for work and play. Erwin Christensen relates that

the basic craft traditions of the eastern part of the country are English, but have been mingled with other cultures, chiefly that of the Germans, who moved from Pennsylvania as far south as the Carolinas, and of the Spanish and French settlers of Louisiana. The crafts produced on southern plantations were often the handwork of Negro slaves (10, p. 52).

German, Scandinavian, Welsh and Canadian French settlers, he continues, "left their cultural imprint on specific sections of the United States" (10, p. 52). As all of these people generally were not craftsmen in the professional sense, their means were not important to them in achieving the ends. The materials and tools were chosen according to their availability and usefulness; therefore wood was the primary material,

and tools ranged from the simple jack-knife to the tools of a skilled woodcarver.

Weather Vanes and Shipcarvings
of New England

Wind and weather were of paramount importance to the seafaring nations up until the invention of the steam engine. The English placed great faith in wind-direction indicators, which were in use by the English before the Norman Conquest (21, p. 28). The weathercock is noted by Lambert and Marx (21, p. 28) to be characteristically an English motif. The useful weather vane had many variations in motif and in treatment by folk sculptors in New England during the colonization of America. The fish, a Christian symbol, and the Indian archer were often used, but the cock occurred so frequently that the terms "weathercock" and "weather vane" became synonymous (10, p. 19). "Originally intended only for display; pointers to show the direction of the wind [were] a later addition, and the letters marking the cardinal points of the compass, later still" (21, p. 28).

Seafaring nations also indulged in ship carvings during this period of time. Since ships were constructed of wood, decorative carving was a natural addition to demonstrate a nation's sea prowess. England was very proud of her navy, as was her protégé, young America. The wealth and strength of a nation were judged by the lavishness of carvings that ornamented the ships; therefore the success and triumph of the Yankee ships of early America were represented (24, p. 25).

Other reasons motivated the ship carvings, all of which probably have their philosophical beginnings in primitive cultures. "Personifying of a ship" or "giving a ship eyes to find her way" were motivations for the variety of ship figureheads, which existed up until the replacement of wood with iron as a ship-building material (21, p. 8). One of the most often patronized figurehead carvers of early America was Simeon Skillin (and later his son), of New York City, whose "figureheads were usually carved from white pine, frequently from one solid block of wood, and were painted and gilded" (25, p. 330). Often several parts of their carvings were dowelled together. Carvings on a ship were located on the bow and stern, over door mantels, and in miscellaneous parts of a ship.

Religious Carvings of the Southwest

Religious carvings were not commonly produced in most of America due to strong Protestant feelings against idolatrous images (25, p. 333). However, in New Mexico and surrounding areas where missions were created by the Catholic missionaries from Spain, a great wealth of religious carvings in native styles developed. Up until 1750, when New Mexico was under Spanish colonization, the furnishings, paintings and sculptures coming from Spain by way of Mexico filled the missions; but during the next one hundred years carvings were necessarily constructed at the missions (6, p. 40). When Spain no longer controlled the missions, the Franciscans themselves executed

the works out of love for the people; later they taught the Indians themselves to copy and carve and finish the works from the Gothic art style, which had flourished in Spain during the sixteenth century. Panels of relief were built up with gesso (whiting), painted and gilded in the tradition of Gothic art; gesso relief was added to free-standing carvings in the flamboyant rococo style, which followed the Gothic and baroque periods. Both of the Spanish types of religious carvings, the santos de retablos (flat images) and the santos de bultos (images-in-the-round) were adopted by the Indians, who interpreted their figures in a directly personal manner, giving the carvings their current unique value (24, p. 334).

Useful Objects for Work and Play in the South and Midwest

Among the first artistic expressions of colonial America were the decoys, whose forms were developed from the Indian game lures (6, p. 19). The first of these bird lures were crudely constructed mud-heaps with sticks fastened together with dried grasses; these were later replaced by bird forms made of stuffed skins and bullrushes painted with natural colors. These first true decoys were made by aboriginal ancestors of the Paiutes in Nevada (24, p. 131). The later hand-carved varieties were adopted by American folk carvers and continue to be one of the few forms of folk art surviving the machine age. According to Jean Lipman, in 1948, discriminating bird hunters yet required hand-made decoys which were still being carved by "hunters, carpenters, village whittlers and

professional decoy makers" (24, p. 131).

Two wandering whittlers of Pennsylvania, who were contemporary with each other (c. 1850-1890), led similar lives of meager existence but probably had no knowledge of each other. Wilhelm Schimmel, German descendant, and George Huguenin, French-Swiss immigrant, enchanted many a Pennsylvanian child with groups of small farm animals or biblical figures. These groups of toys were regarded as "quiet toys" (24, p. 118) for Sunday, when no excessive noise and vigorous play was allowed in the homes of puritanical Pennsylvania. The individual styles of the two carvers are noted by collectors. Schimmel is particularly admired for his larger, detailed eagles which were typically crosshatched, making each feather on the wings and body stand out separately (30, p. 115). Huguenin is noted for his carved sheep made from several pieces of wood joined together and covered with actual sheep's wool (30, p. 129).

In the Southern Highlands, a craft tradition is still in progress with its background dating back to the colonial period when settlements extended into these hills. The people here, due to their geographical environment and isolation, have kept their mode of living virtually the same as it was in pioneer days (16, p. 37). The tools they continue to use are hand-forged metal, shafted to wooden handles, and include the saw, plane, boom-and-treadle lathe, drawknife and vise bench, and the ancient wooden maul and froe (similar to the Indian's maul and driving sticks). The maul, made of hickory, withstands hard usage and is still used by some of the old timers in the

Appalachians, for the purpose of riving shakes, or shingles (16, p. 148).

The hickory is the most abundant and heavily used wood in the craft of the highlanders. It is a sturdy wood for tool handles and for furniture. The chairmakers skillfully join the framework of a chair so that no nails or glue are needed; the natural shrinking properties of the wood hold it firm (16, p. 152). The bark is smoothed, stripped, and woven into a seat which made it "the most durable and to many the most attractive mountain bench or chair" (16, p. 149). "The shag-bark hickory [is] a tree, which, in addition to its beauty, provides food, lumber, cordage, fiber, fire, light, dye, a flavor for cooking, a preservative for meat, and a medicine for the body" (16, p. 150).

The boom-and-treadle lathe, still in use in the Southern Highlands, is an extension of the Indian's bow drill. The bow drill consisted of a vertical shaft, pointed at both ends, the top of which was loosely fitted into a disk. The disk was held in one hand while the bow string, wound around the vertical shaft, was moved back and forth (1, p. 17). The lathe

instead of turning the timber to be shaped in rapid revolutions [as the power-lathe does] is a device in which the strap, rawhide or rope, is fastened to a sapling, or a pole overhead which forms a tension or spring, and is brought down and wound around the piece of wood to be shaped, and extending toward the ground is attached to a board treadle. The turner pushing down on the treadle with his foot turns the strap around the piece of wood and the tension of the spring above his head unwinds the strap rapidly.

As it unwinds the chisel in his hand cuts the revolving wood. The pressure of his foot on the treadle winds up the belt again, and the spring of the lever above unwinds it as he cuts another shaving. A gouge is used to rough out the wood and a straight chisel to finish it (16, p. 152).

One of the early American crafts, polychromed figure carving, which found purpose in the figureheads on ships, store figures, carousel horses and figures, and storefront signs as perpetuated in the highlands only in the polychromed carved dolls and whittled toys. Among other hand woodcrafts performed by the highlanders are the intaglio-carved molds for butter and cakes, steam pressers in the tailor shops, and wood block stamps for textile printing.

Not much remains of the woodcraft of the Negroes who labored for their white masters in the South. However, it is known that many of the household utensils needed in colonial days were crafted by the slaves as well as by their masters (14, p. 16). A walking stick carved in 1863, by a slave in Missouri, is in the tradition of West Africa, the only example of "Africanism" found in the continental United States (14, p. 18). Their African-born skills are more evident in ornamental iron work than in any other media used in the South.

Wood Construction in the Contemporary American Arts and Crafts

On the contemporary scene, with arts and crafts becoming integrated again at the turn of the century, and with renewed interest in art being gathered from a greater number of various

social and intellectual groups of patrons and consumers, wood materials have found a variety of uses and personal expressions by individual artists and craftsmen. Speaking strictly of wood constructions by craftsmen and sculptors, techniques may include carving, assemblage, collage, lamination and steam bending, as well as carpentry, while types of material may range from raw wood to lumber to preformed wood. Tools are considered useful whether hand-driven or power-driven, so long as complete control may be maintained.

Sculpture

Sculptors since Auguste Rodin (1840-1917) have been concerned in varying degrees with exploring their material and its possible descriptions of space. Attention was redirected by Rodin to the forgotten "values proper to the art of sculpture-- sensibility to volume and mass, the interplay of hollows and protuberances, the rhythmical articulation of planes and contours, unity of conception" (28, p. 18). This traditional emphasis on mass was continued by sculptors like Hans Arp and Henry Moore in their sculptured works. Leonard Baskin is an American monolithic carver whose works are frontal and ritualistic like the early Egyptian woodcarvings (22, p. 485).

Three American wood sculptors in the tradition of the figurehead carvers, using their carving and construction techniques, are Hans Hokanson, Anne Arnold and Elbert Weinberg. Anne Arnold, who uses slab wood (the part left over after logs are cut into planks) carves, saws, fits and joins each piece;

then pegs or glues them together; thus, she combines carving and assembly in her constructed sculpture. Her greatest achievements are larger-than-life expressionistic representations of animals (9, p. 64). Elbert Weinberg, with similar construction techniques but more elaborate armatures, concentrates on human or angelic subjects (35, p. 54). Hans Hokanson; who uses the chain saw along with hatchets, an adze and chisels, lives near the ocean and shapes from tree trunks robust, abstract forms relating to the sea. He often carves and finishes three or more parts of the complete form and then dowels or joins them together. The tool marks form an important part of the surface and the experimental use of fiber glass as a protective coating has proven effective against checking (19, p. 14).

Gabriel Kohn and Marisol Escobar are more constructors than carvers. Kohn was the first to break with the monolithic tradition--but unlike the metal sculptors who emphasize "linear and planar devices" (26, p. 46), insists upon "the gravity of large masses [with] sawn and laminated wood slats, glued and dowelled together, [which] recall the carpentry of the boatwright" (26, p. 46). Marisol uses lumber, raw wood and buys ready-made table legs, chair legs, casters, barrels and lattices; uses the ordinary tools of a sculptor to create her unique representations of people. "She has invented a technique of putting together painting, drawing, casting, carving with assembled and ready-made objects" (8, p. 38). Like Kohn, she nails and glues wood pieces together to be carved down to a

smooth shape (8, p. 64).

Picasso's revolutionary "space cages" constructed in 1930, followed upon by Alberto Giacometti and Alexander Calder (a contemporary American) with their sculptural molten metal and wire "drawings in space" (28, p. 76), were among the initiators of the use of "linear and planar devices" (26, p. 46) for spatial descriptions. Although Calder's wire and metal mobiles are his most serious work, he earlier constructed small figures with wood and other materials performing different acts or tricks in a model circus; carved animals in jointed flat pieces of wood with his usual humor and charm; and later assembled wood and wire "constellations", painting the wood in the primary colors and employing it for its lightness as well as for its availability after the war (32, p. 56). Another American sculptor, Tom Doyle, emphasizes volume rather than mass by bending large abstract sheets of wood to create an environment of space (19, p. 16). The bending technique used by Doyle is related to contemporary methods of laminating and bending furniture. He bends large masonite veneers or thin layers of plywood into curves, binding these layers with clamps, ropes and pulleys to gradually increase the bend and to avoid cracking the wood. A two-inch thick, laminated form is balanced with lumber or metal beams and painted with fiber glass paint. The metal cantilevers supporting the forms are concealed within the sheets of wood, presenting a floating sensation.

Picasso and Braque began the Cubist movement in 1907 with

their rejection of flat traditional painting. Their original collages were, in the words of Herbert Read,

a protest against pictorial sensuality on the one hand and flat, abstract painting on the other. The collage is an outgrowth of the painter's interest in exploring space in front of the picture plane. His intent is to evolve a relief by utilizing the three-dimensional qualities of the materials (28, p. 63).

Painted relief constructions of Kurt Schwitters, Arp and other Dadaists presented a further development of sculpture which caused "the obliteration of any formal distinction between the painting, the relief, the sculpture-in-the-round and the ready-made object" (28, p. 146). Louise Nevelson, an American sculptress, whose assemblages are box-like compartments, each of which are whole compositions in which selected bits of carpentry or simple blocks of wood are mounted. The whole assemblage is painted black or gold, or left in its natural color. Nevelson's and other artists' assemblages employing found, wooden objects and wood in all other forms of its existence have "those qualities which Schwitters loved--traces of human use, weather, and forgotten craftsmanship" (31, p. 118). In 1960, a group of American collagists' works was exhibited along with Kurt Schwitters' work at the Martha Jackson Gallery in New York. Their techniques and materials were all-inclusive, with emphasis upon the objects of waste in our culture (2).

Crafts

Since his conception of the Bauhaus idea, Walter Gropius' ideal of "the integration of art and technique, of designing and making, [which] would ultimately become the prevailing

pattern of creative work in modern industry" (34, p. 168), has been sought. Some of America's contemporary designer-craftsmen working with wood include designers of furniture, implements and interiors. A recent study of the use of wood in industry in the United States concluded that the use of wood has declined very little in furniture, more in building and most in implements; also that wood is used in combination with other materials more today than in early history, when wood was used entirely alone for constructions (23, p. 94).

Furniture designer-craftsmen presently working in wood are Wharton Esherick, Donald McKinley, and Sam Maloof. Wharton Esherick, who began as a painter, then sculptor, and finally turned to furniture building, has preferred wood to other contemporary materials because of its intimacy. He air-dries his own stock coming from local trees. His early career included interiors but has been limited to furniture, each piece of work having a highly expressionistic character. He uses epoxy to give a protective finish to tops of tables (27, p. 19). Donald McKinley and Sam Maloof, two furniture and implement craftsmen, prefer wood as their material. Both men design their furniture to be functionally simple in style; the one with sharp, straight lines, the latter with sensuous curves (27, p. 19).

Two experimental furniture craftsmen, whose purposes lie between the aesthetic and the practical, are Thomas Simpson of Illinois, and Wendell Castle of New York. Both have tried to redefine the meaning of furniture and their results have been naturalistic and expressionistic interpretations of chairs,

storage containers and other useful items with painted and/or carved features relating the whole piece of furniture to a plant or animal (17, p. 15).

James Prestini, Italian-born American, is a designer-craftsman whose lathe-turned, sophisticated wooden bowls and platters are so beautifully formed and technically perfect that it is ponderable whether they are sculpture or crafts. Edgar Kaufmann, Jr., of the Museum of Modern Art, has said of him, "it is as an artist who needs certain effects, not as a craftsman settled in the limitations of his medium, that Prestini works" (20, p. 3). He has also experimented with wood to explore its limitations as a plastic medium. Using various kinds of wood he brings out the natural color and grain of each by pressure-spraying clear lacquer for the finish.

The concern for closer collaboration between craftsman and architect was the subject for an exhibition in the New York Museum of Contemporary Crafts, in 1962. This concern has continued through the Research Service of the American Craftsman's Council, which has a photo-file of available craftsmen including some actual examples of work by some of the craftsmen for the convenience of architects who may select a co-worker in planning the whole aesthetic experience of a building (5, p. 28). Some of these craftsmen are employed for murals, free-standing sculpture or other art forms for the building. Many of them use wood altogether or in conjunction with other materials to add its inherent warmth to an otherwise cold steel and concrete edifice. Nicholas Vergette, of Southern Illinois

University, most noted for his ceramic architectural commissions, has constructed mosaics of wood and ceramics, more usually with wood as the flat, patterned background for built up, textured clay pieces (33, p. 31). Bernard Langlais' framed mosaics of "packed, jumbled parquetrys, not unlike galleys of pied type," (18, p. 30) are flat, scrapped wood planks sunk into a picture frame. Unlike the formal, geometric floor parquetrys, the planks are assymetrically fitted together. Similarly, Glenn Michaels' wall composition (4, p. 34) is arranged with printer's reglets (narrow, flat planks of wood used in type-setting to separate lines of type). Jane Teller, creator of Oriental-flavored, poetic wooden assemblages, used beams, ties and blocks of wood together with stones of massive size to construct a "wall" for an outdoor garden (4, p. 43).

CHAPTER BIBLIOGRAPHY

1. Adney, Edwin Tappan and Howard I. Chapelle, The Bark Canoes and Skin Boats of North America, Washington D. C., Smithsonian Institute, 1964.
2. Alloway, Lawrence, New Forms--New Media, 1. Junk Culture As A Tradition, New York, Martha Jackson Gallery, 1960.
3. Appleton, Leroy H., Indian Art of the Americas, New York, Charles Scribner's Sons, 1950.
4. "The Architectural Mural--Mixed Media," Craft Horizons XXII (July/August, 1962), pp. 28-44.
5. Backlin, Hedy, "Collaboration: Artist and Architect," Craft Horizons XXII (May/June, 1962), pp. 29-45.
6. Black, Mary Childs, "Wood: The American Folk Sculptor," Craft Horizons XXVI (July/August, 1966), pp. 19-21+.
7. Boyd, E., Popular Arts of Colonial New Mexico, Santa Fe, Museum of International Folk Art, 1959.
8. Campbell, Lawrence, "Marisol's Magic Mixtures," Art News LXIII (March, 1964), pp. 38-41+.
9. _____, "The Animal Kingdom of Anne Arnold," Art News LXIII (December, 1964), pp. 32-33+.
10. Christensen, Erwin O., American Crafts and Folk Arts, Washington, D. C., Robert E. Luce, Inc., 1964.
11. Covarubbias, Miguel, The Eagle, The Jaguar, and The Serpent, Indian Art of the Americas, New York, Alfred A. Knopf, 1954.
12. Dearborn, Frances R., How the Indians Lived, Boston, Ginn and Company, 1927.
13. Douglas, Frederic H. and Rene D'Harnoncourt, Indian Art of the United States, New York, Museum of Modern Art, 1941.
14. Dover, Cedric, American Negro Art, Connecticut, New York Graphic Society, 1960.
15. Drexler, Arthur and Greta Daniel, Introduction to Twentieth Century Design, New York, Museum of Modern Art, 1959.
16. Eaton, Allen, Handicrafts of the Southern Highlands, New York, Russell Sage Foundation, 1937.

17. "Fantasy Furniture," Craft Horizons XXVI (January/February, 1966), pp. 10-17.
18. Janis, Harriet and Rudi Blesh, "Collage," Craft Horizons XXII (September/October, 1962), pp. 30-33+.
19. Kafka, Barbara and Edith Dugmore, "Wood: Two Approaches to Modern Sculpture," Craft Horizons XXVI (July/August, 1966), pp. 12-17.
20. Kaufmann, Edgar, Jr., Prestini's Art in Wood, Illinois, Pocahontas Press, 1950.
21. Lambert, M. and Enid Marx, English Popular Art, London, B.T. Batsford, Ltd., 1951.
22. Larkin, Oliver W., Art and Life in America, New York, Holt, Rinehart and Winston, 1960.
23. Lawrence, Bill R., "A Historical Study of the Kinds of Wood Used in the Construction of Implements, Furniture and Buildings," unpublished master's thesis, Department of Industrial Arts, North Texas State University, Denton, Texas, 1953.
24. Lipman, Jean, American Folk Art in Wood, Metal and Stone, Connecticut, Pantheon, 1948.
25. Mendelowitz, David M., A History of American Art, New York, Holt, Rinehart and Winston, Inc., 1960.
26. Miller, Dorothy C., Americans, 1963, New York, Museum of Modern Art, 1963.
27. "The New American Craftsman: First Generation," Craft Horizons XXVI (June, 1966), pp. 16-19.
28. Read, Herbert, A Concise History of Modern Sculpture, New York, Frederick A. Praeger, Publishers, 1964.
29. Ritchie, William A., "Iroquoian and Algonkin Tribes," Indian History of New York State, Educational Leaflet Series, No. 7, Albany, New York State Museum, Fall, 1950.
30. Robacker, Earl F., Pennsylvania Dutch Stuff, Philadelphia, University of Pennsylvania Press, 1944.
31. Seitz, William C., The Art of Assemblage, New York, The Museum of Modern Art, 1962.
32. Sweeney, James Johnson, Alexander Calder, New York, Museum of Modern Art, 1943.

33. Vergette, Helen, "Nicholas Vergette," Craft Horizons XXII (July/August, 1962), p. 31.
34. Wallance, Don, Shaping America's Products, New York, Reinhold Publishing Corporation, 1956.
35. "Wood Carvers' Comeback," Life XLV (July 14, 1958), pp. 54-7.

CHAPTER III

A PROGRAM FOR THE USE OF WOOD IN THE PRIMARY ART CURRICULUM

Preparation of the Material, Equipment, and Physical Arrangement

The Material

The selection of material used in the described activities was found and collected from two major sources: nature and man. The natural forms of wood varied in texture and pattern according to the age and condition of each found piece, the surfaces of which were worm-eaten, moss-covered, sun-bleached, parasitic, rotten or mildewed, burned or charred. The natural wood forms ranged from green branches and twigs, to seasoned logs in cross-sections and lengths, weathered limbs and roots, and decayed fragments of bark and layers of wood. The milled forms of wood, mostly pieces of wood which man has discarded for one reason or other, varied in texture and pattern also according to the age and condition of each found piece, the surfaces of which were clean or weathered, treated or natural. The milled wood included various sizes and shapes of lumber, shingles, pegs and veneers; no forms of plywood or pressed wood were used since the emphasis was placed on natural color, treatment and quality of solid woods. The forms of wood waste varied in texture and pattern such as chips, shavings, dust and splints that gather

from the use of wood-cutting tools. Preformed wood included pieces of lathe-worked, filligreed, or jigsawed objects such as ornamental molding or decorative panels; standard-sized objects such as spools, disks, toothpicks, matchsticks, ice cream sticks and tongue depressors, art-canvas wedges, paint stirrers, wooden forks and spoons, and cork; painted, varnished or unpainted objects or parts of objects such as wooden toys, jump-rope handles, handles from brooms and other tools, picture frames; pieces of boxes, crates and kegs used for fruit, nails, packing, etc.

The location of natural wood forms in nearby fields, creek beds, campfires or other fire sites, and beaches was motivated by the suggestion of a hike or scavenger hunt, in groups or individually. The location of milled forms of wood and wood waste was obviously in the places where woodworking is performed: lumber yards, cabinet-maker shops, domestic building sites; industrial art departments of junior and senior high schools or colleges; museum and college sculpture classes; home workshops. The teacher may have to locate much of these scraps or arrange with junior and senior high school teachers, museum and college instructors to acquire a supply of scraps. In certain cases children were able to help supply the scraps from home workshops and other sources. The wood supply was first gathered by the teacher and, as the year progressed, by the children when they felt more confident of the type of wood needed and when sources became more apparent to them. Some pieces of wood were brought in as a result of purposeful searching, other pieces were found

accidentally and brought to the art room.

The hardwoods and the softwoods were considered suitable for certain purposes in this study. Naturally the hardwoods were more suitable to activities which did not involve saws, nails, or chisels; therefore, hardwoods were well-suited to assemblages and collages. Softwoods were adaptable for all activities but were not as beautiful as the hardwoods in their natural colors; therefore, carving and modeling, and constructions more easily involved softwoods. Names of woods were not emphasized in this study, however, the variety of woods used were pine, cedar, cottonwood, prima vera, walnut, mahogany, redwood, and other local varieties.

Equipment

Three factors determined the choice of each piece of equipment that was used for this study: its functional importance, expense, and availability. All necessary tools with the exception of nails were acquired through the budget requisition of the Dallas Independent School District. The other supplementary items which had to be personally supplied were the wood bench for the working area, pegboards with hangers for storing tools on the cabinet doors, and two shelves for the display space.

Of all the equipment needed for wood projects of this scale, the most functional was the wood bench. (See Figure 1, page 28.) After careful consideration of various wood benches for woodworking in classrooms and studios, the type of wood bench for this study was designed and built. Alan Durst,

sculptor, (3) described a working table of solid construction which stood firmly and had adequate holding devices for a professional sculptor. In Industrial Arts for Grades, K-6, (4) a description of an ideal wood bench and types of substitutes was given, each of which was sturdy, provided sufficient work space, was of permissible height for comfortable use by pupils, and had holding devices. The wood bench for this study was constructed from six three-foot lengths of 2"x4"



Fig. 1--The wood bench

redwood planks. Three planks were used on the top; two were cut in 18" lengths for the four legs; the last was halved for the supports to which all the planks were nailed. A vise was bolted to one end of the middle plank and one side plank, thus completing the wood bench. The size chosen for a wood bench was gauged for children between six and nine years, for sitting, straddling, propping a knee, or kneeling beside while working. The cost of the wood bench was nominal.

The pegboards were purposeful in keeping the work space orderly and in encouraging replacement of tools. Two 15" square pegboards were hung on the double doors of a cabinet. On each pegboard an outline of each tool was drawn.

The display shelves helped to set apart the finished work

and to provide a special setting for three-dimensional forms in the room. Two shelves, six-foot lengths of 3/4"x10" pine planks, were needed in this situation to display finished pieces properly. A temporary shelf was raised to the level of the bulletin board above the cabinet and was used as one display area. The other was a free-standing shelf on 36" wrought iron legs constructed primarily for display of three-dimensional work, but found many other useful purposes in the art room.

The basic tools needed in order of functional importance were white glue for joining; claw hammer for joining or separating; nails for joining and representation; hand crosscut saw, for cutting away and shaping; files for smoothing; vise



Fig. 2--The work area

and clamps for holding; hand drill and brace-and-bit for texture, holes, joining with pegs and representation; chisels for forming, texture, representation. Nonessential but functional tools

included sandpaper, tack hammers, mallet, wood-carving tools and drawknife, pliers, wirecutters, tin snips and a screw driver.

Physical Arrangement

After research into other treatises on woodworking in classes, a place on which sawing, hammering and other noisy,

vibrating activities could be done with the least amount of disturbance to others necessarily required the provision of a special work area. Storage of wood to be used, easy access and visible display of tools and materials made necessary the provision of a special wood cabinet with the addition of pegboards on the doors. A display space removed from the confusion of the children's woodwork still in progress and stored on the cabinet top necessitated the addition of two shelves for the display of finished work; work was also displayed outside the room in the hall exhibition showcase and in the children's homerooms. Part of the display area and the working and storage areas may be seen in the illustration. (See Figure 2, page 29.)

The Activities of Designing and Working with Wood

Each of the following four general activities has one common goal: to use wood as a workable material for the children's creative solutions to particular design problems. The introduction to each activity is in each case a general introduction to the design problem which applies to the whole class using various media (wood, clay, paint, cardboard, etc.) while the specific introduction to the working problem applies only to the child or children using wood.

Assemblages

Assemblage is a term given to the relatively new art form of assembling parts to make a whole. The art is an extension

of collage, both being French terms, however each is a completely independent form of art. Assemblages are usually considered three-dimensional forms but can also be frontal, relief forms, free-standing or connected to the wall.

Introduction of children to the activity.--The design problem--pattern--was related to the primary children's innate capabilities of selecting and exploring with new ideas and materials to express what they have seen or felt in their own environment. Discussions involved both the things that happen to be within seeing and feeling distance and the things that were brought in for that purpose. Appliqued designs on a quilt, prints on the children's clothes which repeat in shapes and colors were examined and related to pictures of architecture and aerial views of the countryside. Looking down, looking up and looking in and around for repetitions were stressed. Visual and tactile texture was examined when it was noticed to be part of the pattern.

Little or no introduction was needed for the working problem. The material used for the activity was limited to milled wood forms since their straight sides were easily balanced. The children were naturally motivated by the first appearance of a box of hardwood blocks of interesting shapes, sizes and natural colors. Their innate feeling for rhythm and repetition found expression in balancing and playing with forms, and arranging wood pieces to become towers, walls, rows, bridges, enclosures, etc. Since no tools or construction

problems were involved with the simple placement and retraction of shapes there were no apparent working problems for the children.

Designing and working procedures of the children.---Enthusiasm was high and the children were eager to be chosen to go to the wood bench. As turns were taken, of necessity, the working procedures of the first few children were shy or aggressive, depending on the nature of the child, but later in the year, as the activity's newness wore off the children became more expressive. First grade children were allowed and encouraged to be more abstract and experimental than the other grades in their design. Second grade children after experimentation were asked to be more purposeful in building up blocks or laying them flat within a picture frame. Third grade children were encouraged to make moving parts and were asked to explain their assemblages to the class upon finish and before disassembling their creations.

During the year the children worked alone or in groups building together, which resulted in imaginative play; when units were in process the subject matter was predetermined. "Going places" was one of the themes on which the children were working in different media. The assembled "wood-mobiles" were glued and doweled together after the child had finished composing all of its parts. Airplanes, sailboats, train engines, trucks, bicycles, and space ships were made as each child related the shapes of wood to a mode of transportation. Another unit theme was "people", involving various media and

during which several wooden people were assembled ranging in heights up to 36 inches. "Games and toys" was the title of another theme, in which old, real toys of wood, painted or natural, such as parts of "Sifo" balancing men, play logs, jump-rope handles and wooden parts of parlor games, were used as parts of wooden assemblages resulting in a new toy or game.

At other times when the subject matter was chosen by the child, interesting "floor plan" or "map" groups were arranged and given titles, such as a wharf scene, Six Flags, a garden, a castle, a living room, a machine that cuts meat, a paper factory, etc. (See Figure 3, page 34.) Nonrepresentative arrangements resulted from free expression such as the symmetrically balanced structure arranged by a second grade boy.

(See Figure 4, page 34.) In all grades, experimentation in

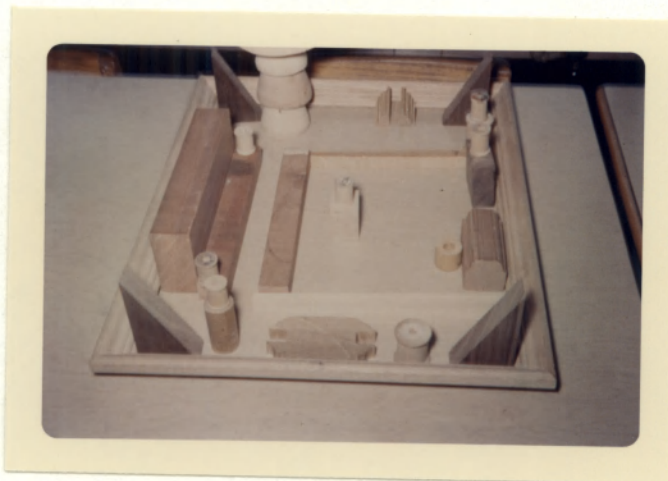


Fig. 3--Temporary assemblage of a living room.



Fig. 4--Decorative assemblage using symmetrical balance.

balancing and assembling walls, rows, posts and lintels, pyramids (right-side-up and inverted), and towers was evidenced. Some of the children laid wood flat inside the picture frame to represent people or houses. Two of these flat assemblages were titled twins, a boy and his house. A third grade boy assembled a robot which had eyes through which he could



Fig. 5--Permanent assemblage of a robot.

"aim" his robot. He worked several days afterward to drill holes for wire dowels which made the arms and head movable; the rest was glued together. The natural hardwood finish was left untouched. (See Figure 5, page 35.)

Constructions

Moholy-Nagy (6, p. 163) wrote that man perceives space through his sensory centers of sight, hearing, equilibrium and locomotion. Michael F. Andrews has written:

A young child explores and experiences virtual space with his whole being when he climbs a tree and finds himself among the branches, when he crawls through a drain pipe, hides under a table or walks through a crowded street. Each involves kinetic learning--the perception of bodily movement in space (1, p. 8).

Constructions in wood are concerned with space as a design problem and structure as a working problem.

Introduction of children to the activities.--the design problem--space--was introduced as a real phenomenon that exists everywhere. First the word and all its meanings were discussed, in order to establish what space is and where it is. Breathing in and out, jumping up and down and whipping through the air to actually "feel of the space" surrounding children's touch and to overcome their idea of space being only something far away. It was demonstrated that a box with a lid could "capture" space, but that space could be free, yet still inside of the box if the lid was left off or if holes were punctured in the sides; at the same time it was noticed that light entered the box. Pictures of tall buildings, churches and homes were studied and discussed with reference to the space they occupied.

The working problem--structure--was first examined in the assemblages and how weights of wood or gravity had an effect on their placement. The joining techniques which were more suitable for various purposes were studied in the tables and chairs in the room and in the walls and windows of the room. The working problem also involved an acquaintance with the woodworking tools, their place and use, and getting the work area ready, which was first introduced to the whole class before individuals began this activity. Each child was asked to first select the type of wood that he would use (natural or milled wood) and to decide what he would make, how it would best fit together and where and if sawing were necessary. Sawing and nailing could then be carried out

while other activities were in process with little or no interruption from the teacher unless an unforeseen problem arose. Questions were not answered but directed to the child in order to encourage his own solutions. The steam-bending of wood which was an intriguing activity was motivated by the presence of a steaming hot plate which had already been in progress. The nature of the limp wood splints suggested many possibilities. In this study a hot plate was used to boil water in a 12"x18" cake pan, which provided the steam to heat the splints which were wrapped and suspended over the steam. (It is easily imagined why this activity was done in the cooler months of the school year.) In Popular Mechanics (2, p. 192), other methods invented to bend woods were suggested: the use of a household steam iron; soaking overnight (if the wood is thin enough); or employing a gallon can of boiling water which is piped to a square gutter--or-box--holding the wrapped splints. The piped steam circulates through the wood and out of the two open ends of the gutter.

Designing and working procedures of the children.--The constructions included putting together standardized pieces of any size or character of wood, which was available in quantity; these were combined or used separately by individuals or groups in arrangements which varied in structure, use and possible working parts. They were glued, bradded, dovetailed, pinned together or attached in the best suitable way. Paint or crayons, shoe polish, charcoal or varnish were applied to the finished products. Pine cones and ice cream sticks were

joined with a glue and sawdust mixture or modeling clay to construct animals or people. Spools of varying sizes were glued or strung together, chiseled apart lengthwise or sawed crosswise, to construct whatever form developed. Clothespins were used in connecting together parts of a whole creation; some were made to be kept while others were dismantled after being displayed. Wooden chalk boxes were taken apart, split and put back together while outlining space into various forms.

Also included in this activity was the building of useful objects or non-objective constructions as a simple type of carpentry. These con-

structions were free-form buildings since no measurements were made except with the eye or the repetitions of one length. Some children with a preconceived notion of what they wished

to make were allowed to employ the tools and

lumber to carry out their ideas, in which case a suitable structure was dependent upon the use of the object. Some children were more explorative and eager to create non-objective constructions as in this first grade girl's drilled, sawed and nailed wood creation. (See Figure 6, page 38.) Still others



Fig. 6--Non-objective construction using assymetrical balance.

decided what to make after examining the wood and getting suggestions from the shapes of wood, combinations of pieces or



Fig. 7--Painted construction of a birdhouse.

inside and out, complete with a dowel stick roost inside.

(See Figure 7, page 39.) He later said that his father erected the birdhouse and some birds came to live in it. Other con-



Fig. 8--Unpainted construction of a stool.

tool actions. The first grade boy who made the illustrated birdhouse planned and built it completely without help in the design or working with tools. He had built things before at home. The birdhouse is painted

structions included a stool made by a third grade boy who had the preconceived idea of making a chair, involving the measurement by sight and relationship of the legs which were glued into the drilled holes. He later said

that both he and his sister enjoyed sitting on the stool to watch television. (See Figure 8, page 39.) A scooter with colored plastic spool wheels (part of a supply of 5" plastic and wooden disks which was furnished by a mother who worked in a venetian blind supply house) was constructed to be ridden by the first grade boy, needing help only in the application of a wire pin to hold the wheels. (See Figure 2, page 30.) A third grade girl constructed a doll bed, completing it with the addition of a quilted plastic garment bag which she converted into a bedspread.

Another type of construction was the technique of bending wood, involving both steamed wood splints (done only by third grade children) and green wood saplings. The saplings were accumulated from local tree prunings. Some woods were found to bend easier than

others; in this study limbs from Arizona Ash were used. [Hickory and ash are the best; elm, birch, maple, red gum, oak and beech will bend if the wood is straight-grained (2, p. 192).] Shapes were

bent and tied and after some time were untied and put together with raffia, yarn and wire to create forms, representational or otherwise. Illustrated in the above photograph



Fig. 9--Free-form design made of bent green saplings.

is an example of a green wood sapling creation by a second grade boy. (See Figure 9, page 40.) Other sapling constructions were more usually as abstract as the illustrated one. The steamed wood creations of the third grade included this illustrated rabbit constructed in two periods by a boy.



Fig. 10--A rabbit constructed of bent wood splints.

(See Figures 10 and 16, pages 41 and 49.) A twist of wood suggested to another boy an old woman which he completed by wrapping another splint around it and securing it with sawdust-wheat paste mixture to a base. (See Figure 16, page 49.) Another boy made a bird, while two girls constructed "art glasses" which in the place of lenses were supplied with criss-cross yarn in one pair and assorted colors of tissue paper bits in the other pair. Each of the ideas grew out of the materials available. The splints were steamed and bent, stapled and cut by a pair of tin snips, punched with hole punchers and tied with raffia and rubber bands.

Modeling and Carving

Modeling and carving are the two oldest methods of forming useful objects as well as sculpture. Not only wood but other natural materials, stone, clay and (in some cultures) metal,

were available to primitive hands and tools. Although wood was not a primitive modeling material, the sources of wood waste abundantly available to present day man are made useful in large scale industry and in the hands of artists. A plaster mixture, gesso, was applied to wood to form raised areas by different cultures as a variation of the modeling technique for centuries.

Introduction of children to the activities.--Before approaching the design problem the whole class was made acquainted with the raw materials: clay, in its powder, wet and dry forms; papier mâché, its components and similarities with wood mâché of various forms of wood waste (chips, shavings, and sawdust); logs and 2"x4" planks on which scraped, chopped, pounded, scratched, incised, depressed, peeled, planed, sanded, curled marks were previously made to visually explain the possibilities of carved wood. In this manner a greater appreciation was gained for the forms of modeling materials and conversely a lesser fear of the cutting-away process. For the wood modeling material, one plastic dipper of wheat paste was mixed with two dippers of sawdust, water was then added from a plastic detergent squeeze bottle until a pie dough texture was obtained. Pigment was sprinkled from a plastic cleaning powder can for the desired color. The whole mixture was stirred with ice cream sticks in aluminum pie pans. The children were able to mix their own in individual pans. The working problems in modeling and carving with wood were similar to those in modeling with clay and in cutting

cardboard, the materials being malleable on the one hand and resistant on the other, and therefore, were demonstrated in conjunction with each other.

The design problem--form--was related to the feel of real animals and pets, and the form of different objects when the children touched them with their eyes closed. Talk of bones and muscles, hair and skin was reinforced by the examination of real bones and by the anatomical chart from the science room. Discussion followed of what constituted the forms of other things: lions, billy goats, worms, elephants, potato bugs, etc.

Designing and working procedures of the children.--The



Fig. 11--A cut-out form of a giraffe.

activities included cut-out animals which originated as cardboard exercises, in which puzzle-like pieces were cut off and used in another position on the main piece. Some children advanced to the wood using their cardboard

as a pattern. The pieces were glued or strung together; incised or depressed; painted with unusual, bright tempera colors and lacquered. (See Figure 11, page 43.) Another type of carving

was the carve-out people in which chisels, brace-and-bit and saws were employed to achieve combination "carved-and-constructed" forms; attention was directed to all four sides of the log or 2"x4" plank of softwood. The illustrations show a baseball player carved and constructed by a third grade boy. The contrast between redwood and pine complemented the figure. No color was added but the

player's number was chalked on the back.

(See Figure 12, page 44.)

A carved-and-constructed cowboy was made by a second grade boy.

The 2"x4" plank was incised with chisels, drilled for eyes, overlaid with a wooden chalk boxlid for clothes

(colored chalk marks were complementary to the appearance). The

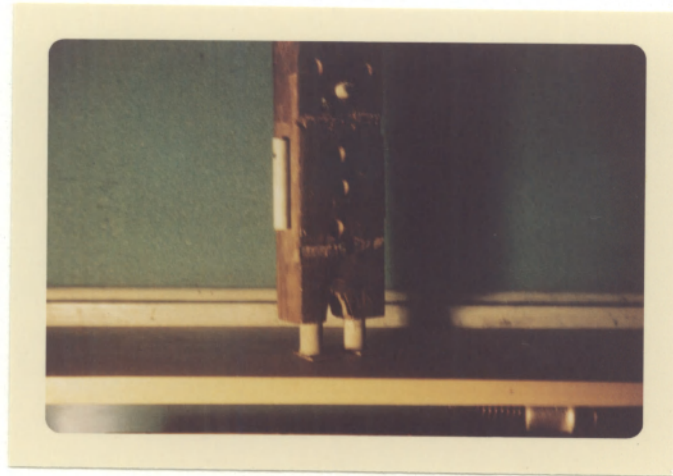


Fig. 12--A carved-and-constructed baseball player.

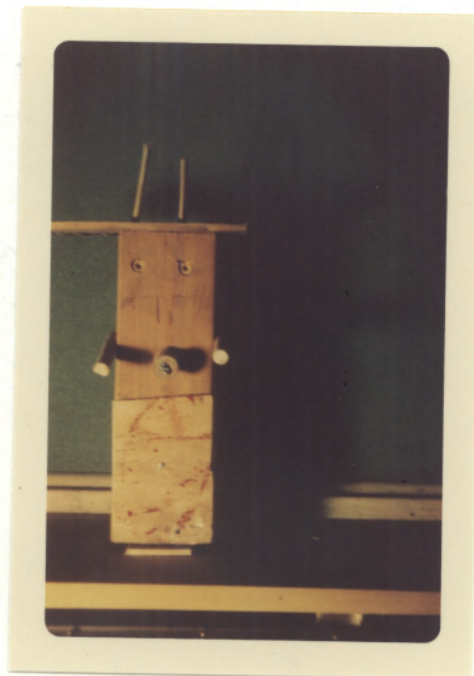


Fig. 13--A carved-and-constructed cowboy.

dowels at the sides served the dual purpose of arms and guns. (See Figure 13, page 44.) Also shown is a head carved com-



Fig. 14--Carve-out form of a head using saw and chisels.

pletely with chisels and saw by a second grade boy. He was satisfied to use only those tools in accom-

plishing his form. The wood was waxed afterwards. (See Figure 14, page 45.)

Complimentary commercial paint stirrers

provided a good source for preliminary forms to be filed, cut away and/or added to the main piece (5, p. 106).

Modeling activities included modeling on a board or inside of a cigar box, or covering cardboard forms with a mixture of wheat paste and sawdust, to which colored tempera pigment was added, to all of which chips and shavings were adhered to represent features or texture. If the modeling mixture was to be applied to more than one flat surface the adhering agent was diluted, white glue. Plaster was modeled on a flat board or wood block to achieve forms which were painted with thin water paint while the boards or blocks were still wet. Melted wax crayons were dripped on a flat or round stick to build up forms.

Collages and Mosaics

This activity investigating different effects of wood surfaces, both visual and tactile, involves free interpretations of two related art forms: collages and mosaics. Collages are made of many kinds of objects having visual or tactile texture, which are selected and arranged on a surface to create an illusion of other objects in an abstraction or representation. With textural variety as the design emphasis in collages, milled wood forms or natural wood forms along with many other materials are used. The ancient art form of mosaics, in its less restricted form in the twentieth century, still retains the original intent of piecing together bits of similar sizes and shapes of ceramic tesserae, but mosaics of this century have explored new materials and combinations of them to achieve certain surface effects, either as abstractions or representations. Two related, industrial forms of visual arrangements of pieces of wood in woodworking are: marquetry in furniture and parquetry in floors, which consist of laminated, geometric shapes of inlaid wood.

Introduction of children to the activities.--The design problem--surface texture--was introduced generally to the class as a game to "hunt and tell" the many different textures that they found in the classroom, describing the texture. One of the children was asked to walk around the room while the others watched and held up their hands when he came close

to something that they saw having a change in texture. Secondly, a group of pictures of animals and objects was matched with a selection of materials (wood, rope, cotton, cloth, etc.) by several children in order to encourage the use of similar textures found in varieties and combinations of materials. A visual collage by Picasso, a wood relief by Arp and other examples of visual texture were examined and discussed. Children were asked to bring things from home to be put into collages or to be used for rubbings, two activities which were done simultaneously.

The wood mosaics were related to the children through the examination of a wooden box which came from Brazil having a map of South America, the countries of which were inlaid from pieces of the local kinds of wood found in South America; an example of a mass-produced type of marquetry. Not only was the inlay technique of interest but also the variety in natural colors of wood.

The working problem was introduced with the location of items of various textures to be used: wood chips, sawdust, bark, wood fragments and limbs; small or thin wood scraps, preformed wood; cloth, yarn, buttons, cotton, ribbons; sandpaper, cardboard and papers (printed or unprinted), etc. Adhesives, such as sawdust-wheat paste mixture, glue; or yarn and needles; or tacks and staples; or plaster were located for the children and demonstrated to individual workers.

Designing and working procedures of the children.--The collages included shadowboxes in which the design problem was

for the children to choose textures of wood which were suitable for the design or objects represented and in which the objects moved or stood away from the background.



Fig. 15--Collage in a shadowbox.

Shadowbox collages were limited to the third grade since the concept of depth between objects within a picture frame is involved, with which the younger children were not yet concerned. The shadowbox shown in the illustration was made by a third grade boy, who chose to represent "a boy climbing a tree to look into a bird's nest", using textured symbols which looked and felt like the actual

objects. Sawdust was modelled to the floor and walls to form a hill and cave, a limb was used for a tree to which paper leaves were attached, a spool and nails formed the boy, and a bird and trees and other descriptive colors were painted in the shadowbox. (See Figure 15, page 48.) Collages on burlap with sticks, pine cones and pieces of wood interwoven or stitched with the addition of other materials were done by second graders. Reliefs were done with scrap shingles and slivers of wood on shingles or wood backgrounds, adhered

with wheat paste-sawdust mixture, glue, tacks or staples. In the illustration a collage of slivers of pine and chips of cedar were combined by a first grade boy to form a house and tree. (See Figure



Fig. 16--Relief collage of a house and tree (in background).

16, page 49.) The first grade children also made relief faces and animals as wood collages.

Wood mosaics of cabinet shop scraps or other objects in quantities of standard sizes were glued to a flat board which remained flat, or stood freely. The pieces, spaced or fitted close, were grouted, filled in with colored yarn, or left alone.

CHAPTER BIBLIOGRAPHY

1. Andrews, Michael F., "Architecture as A Basis for Creative Experience," Arts and Activities LIX (February, 1966), pp. 8-11.
2. Banister, Manly, "Put A Bend in Wood," Popular Mechanics LXVIII (October, 1962), pp. 192-7.
3. Durst, Alan, Woodcarving, New York, Studio Publications, Inc., 1961.
4. Gerbracht, Carl and Robert J. Babcock, Industrial Arts for Grades K-6, Milwaukee, Wis., The Bruce Publishing Co.,
5. Laliberte, Norman and Maureen Jones, Wooden Images, New York, Reinhold Publishing Corp., 1966.
6. Moholy-Nagy, L., The New Vision, New York, W.W. Norton and Co., Inc., 1938.

CHAPTER IV

CONCLUSION AND RECOMMENDATIONS

Results from This Study of Children's Art Experiences with Wood

In this study limited to one school year, observations were made as to the suitability and unsuitability of certain tools and kinds of wood for use in the first three grades at Rufus C. Burleson School, Dallas, Texas. It was found that both hardwoods and softwoods were valuable when used with suitable tools and working procedures. Natural woods and milled woods were found useful when in sizes not larger than approximately 18 inches for reasons of storage and handling. In the activity of assemblages, with the exception of the permanent assemblages for which glue and, at times, the hand drill were used to join the permanent works, no tools were involved, therefore the hardwoods used for assemblages were suitable to all three grades. The hand drill was difficult for most children to guide straight, and consequently many times the points broke. The constructions, employing most of the cutting and joining tools and softwoods were more suitable to the well-coordinated children in the second and third grades, the boys being more aggressive and eager to work than the girls. The most common working problem in constructing with wood for all children was the proper use of holding devices for prime comfort in sawing, drilling and

hammering. The modeling and carving activities were suited to all three grades, the girls being more interested in modeling and the boys in carving, probably due to the mixing involved in the first activity and the pounding actions of the second activity. The use of chisels for carving wood was intriguing to all three grades, the first grade being more explorative and developing from simple incised outlines to deeper-cut forms attempted by the second and third grades, according to the individual's temperament and physical development. The collages and mosaics were easily manipulated by all grades, as the only tools involved in this activity were glue, large needles, sawdust-wheat paste mix, or plaster (mixed by the teacher), while the woods and other materials were selected to be used in their original state.

Other observations were made in this study during the school year of the presence of uncontrolled or controlled consciousness of design in the procedures used by first, second, and third grade children. On the most part the children responded naturally, freely and with little or no inhibitions to the wood projects. However, it would not be fair for this study to ignore the child who did not want to work with wood for some withheld reason, or who felt incapable of performing a task and had to substitute another idea in order to complete his work. In the assemblages, certain similarities in the designing procedures of all of the children were observed: a consciousness of balance, symmetrical

and assymmetrical, was experienced both in the actual weight of the wood and in visual characteristics of the pieces (their shapes, colors and grain). In all three grades, representative and nonrepresentative objects were made as wood shapes suggested to the child an object or part of an object. Arrangements were less complicated if the mental maturity of the child was lower. It was observed that some children composed within the picture frame "floor plans" or "maps" of varying complications: The first grade compositions, when representative and not simply piled or filled into the frame, were usually of one room or one home area (a living room, a garden); while second grade compositions became more imaginary or larger in area and scope (twins, a castle, a paper factory); while third grade compositions were more complex and movable (Six Flags, a ship with working parts, a city with sky scrapers and factory). In the construction activities, consciousness of design took two directions: some children chose the materials to fit their preconceived idea while others planned and developed an idea as they worked. The results, although pleasing in most cases to the children who worked with wood, were seldom as planned since the idea was usually too hard to accomplish, and the children were unaccustomed to the resistance of the materials. In the modeling and carving activities, the procedures were experimental in design, both in the reliefs and free-standing work, and resulted in linear representations concentrating on outlines and descriptive features rather than shaded forms. Modeling procedures were comprehensible to all

grades as a relief-building material, but only to a few as a cover for an armature. Carving procedures developed into a combination of carving and construction to fulfill the form since the take-away process was not fully comprehensible to even the third grades. In the collages and mosaics, the designing procedures were attempts at decoration or representation with textures. The collages and mosaics were of more representative and decorative value to the second and third grades but was also enjoyed experimentally by the first grades.

Suggestions for Further Study

This study was made with its prime goal to be an inspiration for more extensive uses of wood to be explored in public schools. Further studies may include a survey of the extent and values of woodworking in different grades of elementary schools where art is a required subject, and, secondly, a similar study of the creative use of wood in upper grades of elementary schools.

BIBLIOGRAPHY

Books

- Adney, Edwin Tappan and Howard I. Chapelle, The Bark Canoes and Skin Boats of North America, Washington, D. C., Smithsonian Institute, 1964.
- Alloway, Lawrence, New Forms--New Media, 1. Junk Culture As A Tradition, New York, Martha Jackson Gallery, 1960.
- Appleton, Leroy H., Indian Art of the Americas, New York, Charles Scribner's Sons, 1950.
- Boyd, F., Popular Arts of Colonial New Mexico, Santa Fe, Museum of International Folk Art, 1959.
- Christensen, Erwin O., American Crafts and Folk Arts, Washington, D. C., Robert B. Luce, Inc., 1964.
- Covarubbias, Miguel, The Eagle, The Jaguar, and The Serpent, Indian Art of The Americas, New York, Alfred A. Knopf, 1954.
- Dearborn, Frances R., How the Indians Lived, Boston, Ginn and Company, 1927.
- Douglas, Frederic H. and Rene D'Harnoncourt, Indian Art of the United States, New York, Museum of Modern Art, 1941.
- Dover, Cedric, American Negro Art, Connecticut, New York Graphic Society, 1960.
- Drexler, Arthur and Greta Daniel, Introduction to Twentieth Century Design, New York, Museum of Modern Art, 1959.
- Durst, Alan, Woodcarving, New York, Studio Publications, Inc., 1961.
- Eaton, Allen, Handicrafts of the Southern Highlands, New York, Russell Sage Foundation, 1937.
- Gerbracht, Carl and Robert J. Babcock, Industrial Arts for Grades K-6, Milwaukee, Wis., The Bruce Publishing Co., 1959.

- Kaufmann, Edgar, Jr., Prestini's Art in Wood, Illinois, Pocahontas Press, 1950.
- Laliberte, Norman and Maureen Jones, Wooden Images, New York, Reinhold Publishing Corp., 1966.
- Lambert, M. and Enid Marx, English Popular Art, London, B. T. Batsford, Ltd., 1951.
- Larkin, Oliver W., Art and Life in America, New York, Holt, Rinehart and Winston, 1960.
- Lipman, Jean, American Folk Art in Wood, Metal and Stone, Connecticut, Pantheon, 1948.
- Mendelowitz, David M., A History of American Art, New York, Holt, Rinehart and Winston, Inc., 1960.
- Miller, Dorothy C., Americans, 1963, New York, Museum of Modern Art, 1963.
- Moholy-Nagy, L., The New Vision, New York, W. W. Norton and Co., Inc., 1938.
- Read, Herbert, A Concise History of Modern Sculpture, New York, Frederick A. Praeger, Publishers, 1964.
- Ritchie, William A., "Iroquoian and Algonkin Tribes," Indian History of New York State, Educational Leaflet Series, No. 7, Albany, New York State Museum, Fall, 1950.
- Rabscker, Earl F., Pennsylvania Dutch Stuff, Philadelphia, University of Pennsylvania Press, 1944.
- Seitz, William C., The Art of Assemblage, New York, The Museum of Modern Art, 1962.
- Sweeney, James Johnson, Alexander Calder, New York, Museum of Modern Art, 1943.
- Wallace, Don, Shaping America's Products, New York, Reinhold Publishing Corporation, 1956.

Articles

- Andrews, Michael F., "Architecture as A Basis for Creative Experience," Arts and Activities LIX (February, 1966), pp. 8-11.
- "The Architectural Mural--Mixed Media," Craft Horizons XXII (July/August, 1962), pp. 28-44.

- Backlin, Hedy, "Collaboration: Artist and Architect,"
Craft Horizons XXII (May/June, 1962), pp. 29-45.
- Banister, Manly, "Put A Bend in Wood," Popular Mechanics
LXVIII (October, 1962), pp. 192-7.
- Black, Mary Childs, "Wood: The American Folk Sculptor,"
Craft Horizons XXVI (July/August, 1966), pp. 19-21+.
- Campbell, Lawrence, "Marisol's Magic Mixtures," Art News
LXIII (March, 1964), pp. 38-41+.
- _____, "The Animal Kingdom of Anne Arnold,"
Art News LXIII (December, 1964), pp. 32-33+.
- "Fantasy Furniture," Craft Horizons XXVI (January/February,
1966), pp. 10-17.
- Janis, Harriet and Rudi Blesh, "Collage," Craft Horizons
XXII (September/October, 1962), pp. 30-33+.
- Kafka, Barbara and Edith Dugmore, "Wood: Two Approaches
to Modern Sculpture," Craft Horizons XXVI (July/August,
1966), pp. 12-17.
- "The New American Craftsmen: First Generation," Craft
Horizons XXVI (June, 1966), pp. 16-19.
- Vergette, Helen, "Nicholas Vergette," Craft Horizons XXII
(July/August, 1962), p. 31.
- "Wood Carvers' Comeback," Life XLV (July 14, 1958), pp. 54-7.

Unpublished Material

- Lawrence, Bill R., "A Historical Study of the Kinds of Wood
Used in the Construction of Implements, Furniture and
Buildings," unpublished master's thesis, Department of
Industrial Arts, North Texas State University, Denton,
Texas, 1953.