

# White Oak Baskets

BY OWEN REIN



PHOTOS BY OWEN REIN UNLESS OTHERWISE NOTED

Woven baskets are probably the third or fourth manufactured articles that human beings learned to make. In just about every culture that has ever been, baskets have played an important role in the lives of the people. Different basket-making traditions developed in different places, based on what materials were available and the particular technologies that the people had. The white oak basket-making tradition started in the eastern part of North America during the Colonial period when the metal tool technology of Europe came in contact with the white oak timber and the indigenous basket-making traditions of North America. Previous to this, Native Americans had made wooden baskets out of ash by pounding the logs to separate the growth rings. I don't believe that a person can make a basket out of white oak without metal tools to split the grain of the wood.

I learned how to make baskets from a man named Wayman Evans. He was born in 1913 in the hills of Northern Georgia, across the river from Copper Hill, Tennessee, and moved to Arkansas with his

wife Ruth in the 1930s. They worked a small farm outside of Batesville until he died in 1993. Wayman learned to make baskets from his dad, who learned from his dad. Making a basket is the first thing Wayman remembered doing with his hands.

Originally, basket-making was a way to supplement the income from farming, but when Wayman grew up, he and Ruth made extra money working in the canning factories instead; for a long time, Wayman didn't make any baskets. But in the early 1970s, a growing interest in traditional handcrafts created a demand for baskets, so he started making them again and would teach anyone who was "stubborn enough" to try and learn.

## BASIC FORMS

Most all white oak baskets belong to one of three groups:

1) Flat bottom baskets with square bottoms and two sets of ribs, one set running along the width of the bottom and one set running along the length. The ribs are woven in an over-under "checker-

board" pattern to form the bottom. When woven up, the sides can maintain the square or rectangular shape of the bottom or they can gradually progress to a round, sometimes oval shape.

2) Round bottom baskets, usually having 16 ribs (small baskets may have 12 or 9) that are all the same. The ribs have a "propeller" shape with a narrow waist in the center where the ribs are woven together in a starburst pattern to form the bottom.

Both round bottom and flat bottom baskets have their handle and rims stitched on to the top of the basket once the basic form has been woven. Round bottom baskets have a foot rim stitched to the base and flat bottom baskets can wear "shoes."

3) The gizzard basket, sometimes known as the bow basket or egg basket. With these baskets, the handle and rim are made first, lashed together to form a frame. Into this lashing ribs are inserted which hold the weaving that forms the shell of the basket. Gizzard baskets are the "Cadillac" of white oak baskets and are prized by collectors. They are hard to

make and time-consuming. I don't recommend them for the beginner.

## TOOLS

As far as the metal tools go, there are two basic groups: splitting and whittling tools. The splitting tools have blunt edges and include basic log splitting wedges, a froe, and a splitting knife. The wedges are driven with a maul. A wooden club is used to drive the froe. (Never use a metal maul or hammer to drive a froe. Doing this will misshape the back of the blade and prevent the tool from sliding into the split.) The whittling tools include the drawknife and the whittling knife. I also use a small chip-carving knife to work in tight places and trim the handles and rims. The whittling tools should be kept sharp.

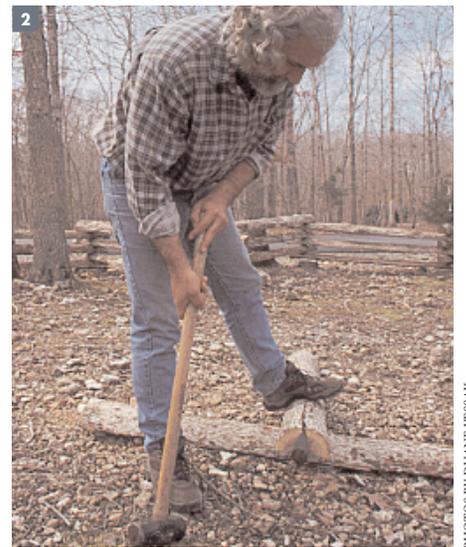
Along with being sharp, the angle of the bevel on both the drawknife and whittling knife is critical to the tool's performance in basket-making. I have never measured the angle of the bevels on my whittling knife. I suppose the angle of my drawknife is less than 25°. Most store-bought knives need to have their angle reduced.

As we will see later in this article, the drawknife and the whittling knife are meant to shave flat surfaces in green wood following the grain. To fulfill this purpose, a sharper, more acute angle is used when compared to the common bench plane or chisel. A sharper angle gives up some control to the wood, making it easier to follow the grain. When the angle of the bevel is too low, the tool will dig into the wood too much. If the angle is too high, the blade won't cut well, extra force will be required, and the cut surfaces will have a tendency to be bumpy.

Wayman used a Greenlee drawknife and a Camilus folding pocketknife. I use a Marples drawknife and a Swedish carving knife with a long blade. Wrapping the handle of the whittling knife will make the grip more comfortable.

In most every situation, the drawknife is used with the bevel up.

A good drawhorse is essential to white oak basket-making. The one I use now is patterned after a plan developed by John Alexander [*Woodwork #52, August 1998*]. Drawhorses don't need to be fancy or take a lot of time to build. I have built a few for myself over the last 25 years. The best ones were simple and I usually felt the need to make slight modifications



PHOTOS BY DUANE YESSAK



after working with them for a while.

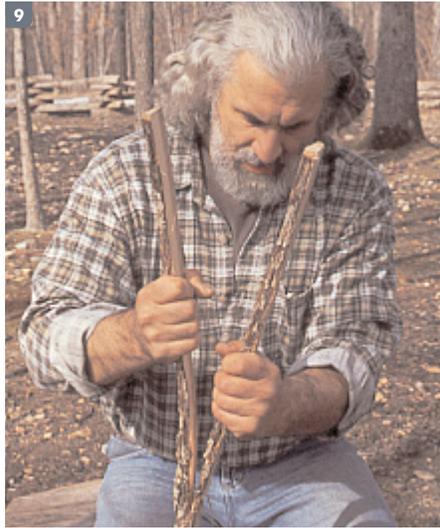
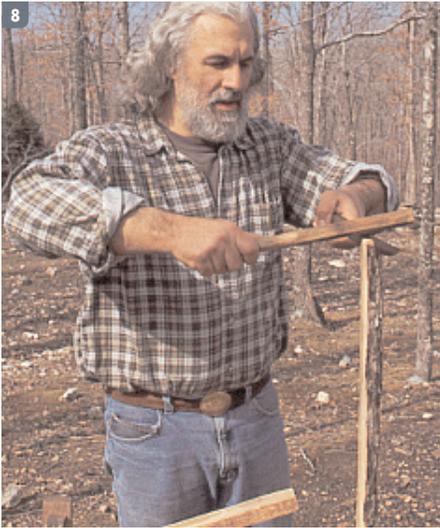
You will need a big saw to cut the tree down, and a little saw to cut the notches in the handle. An ax is used to cut through any connecting fibers when splitting out the log. (Wayman used an ax to fell his trees and was proud of it.) Also, you'll need a piece of thick leather to place over your knee when whittling splits and ribs.

## PICKING OUT A TREE

The first and most critical step in making a basket is picking out the tree. The particular qualities of the wood in

any given tree make all the difference in the world in terms of how well the rest of the work will go. Even though they may look good, some trees will just not work for baskets. Picking out a good tree is not an easy thing to learn to do if you have no one to show you. It takes time and experience to understand what to look for and where to find it.

This is what you want: a young white oak tree with a 6"-8" diameter at its base, tall and straight, with healthy growth rings (10-18 per inch), knot-free from the ground up to at least four feet. The wood should split straight and clean and be



flexible. A little twist is okay, but follow the twist as you work.

Some of these qualities can easily be read from the outside. But qualities such as the size of the growth rings and the degree of flexibility are another matter altogether. For these, I look to the grain and texture of the bark in relationship to my past experience with that area of land.

Good trees grow in good places. I have heard people say that good basket trees grow on the north side of the hill. Sometimes they do, sometimes they don't. Good trees need good soil that doesn't dry out too fast. They need enough competition to grow tall and straight but not so much so as to slow down their growth (slow-growth wood splits well but is weak and brittle). Too much exposure to wind and sun doesn't make for a good basket

tree. I look mostly near the bottom of the hill along the valleys, away from open fields.

It is wise to start with smaller trees and make little baskets while learning the feel of the wood and the look of the trees. Trees can be cut any time of the year. The wood needs to be worked while it is still green, and felled timber will stay fresh longer in the winter. In the summer, wood starts to get old in about three weeks.

Cut your tree close to the ground, above any pronounced flare at the butt that would just cause trouble later. Cut the top of the tree off the log before bumps and knots start to affect the straightness of the bark. Three feet is about the shortest practical length, and logs more than five feet long are better worked after gaining some experience. The longest splits I ever made were about ten feet long.

## MAKING THE PIECES

Along with other forms of traditional woodworking, white oak basket-making is based on a working knowledge of the internal structures and physical properties of the wood. With this in mind, it is good to review some basic tree anatomy first. In this type of work, the trees are taken apart the way they are put together.

Looking at a cross-section of the log, the center of this circle is called the pith. Radiating out like the spokes of a wheel are the "rays." The rays store nutrients and connect the inside of the tree to the outside. In concentric bands running perpendicular to the rays are the growth rings. The rays and the growth rings are like "dotted lines" along which the log will be divided into pieces.

Each growth ring has two parts, a layer of vessels and a layer of solid wood. The vessels are grown first in the spring; they are hollow tubes that carry fluid up the tree from the ground. The vessels are not very flexible and have little strength. This is why slow growth wood is weak and brittle; it has more vessels per inch of wood. The vessels are used in separating the strong and flexible layers of solid wood that makes good material for baskets.

The younger wood underneath the bark is called the sapwood. It is white in color, tends to be more flexible than the darker heartwood, and has fewer knots. This outer portion of sapwood, and maybe a little of the heartwood, is where the best weavers and ribs come from.

As the trees age the chemical composition of the sapwood changes. The wood darkens, hardens, and becomes less flexible. This heartwood is good for handles and rims. In a felled log, the sapwood will spoil before the heartwood.

With a maul and wedges, split the log in half, starting the split along a line that passes through the center (pith) of the endgrain (1,3). I usually split wood from the top down. Occasionally, a tree might like it better the other way around. Use the ax to cut through connecting fibers in the split if necessary.

Pick the best half and split it again, making quarters (2,4). Set the other half in the shade bark side up. Take the best quarter and split it once more into eighths (5).

As the pieces of wood become smaller, the splitting process becomes easier to

control. With finesse and the right touch, splits that are running off can be brought back in line, pieces can be split off-center and even split into thirds sometimes. It all comes with practice, but there is one rule that is worth remembering: **BEND** the **BIG** side. If a split is running off, hold straight the side that is getting smaller and bend on the side that is getting bigger, exerting leverage there to pull the split over to that side.

Up to this point, all the splits have been in line with the rays. But now the heartwood is split off with a wedge or froe in line with the growth rings, about halfway between the pith and the bark (6,7). The inside piece is set aside in the shade to be used later for handles and rims. The outside portion, with the bark and the sapwood, will be made into splits and ribs.

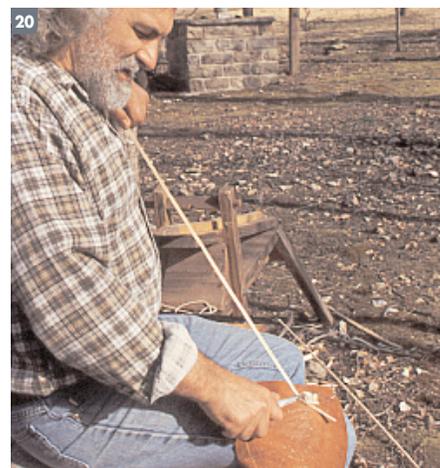
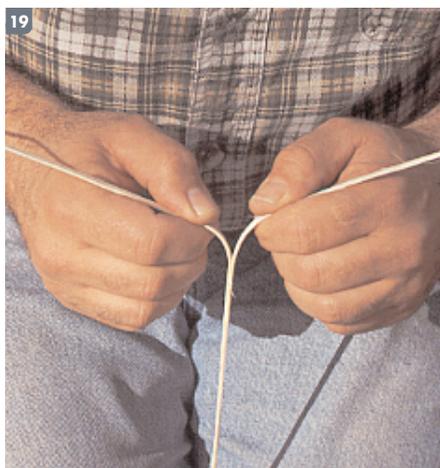
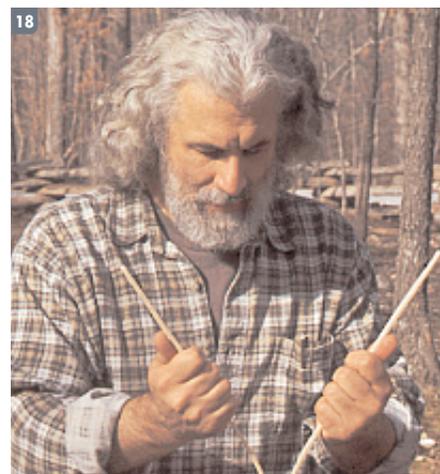
Continue splitting this outer portion along the rays, splitting down to 16ths, 32nds, or until an appropriate size piece is reached for the size weaver you wish to make (8-12). Finished weavers of 1/4" to 3/8" wide are a good place to start.

This final split-out piece of wood I call a "bolt." The bolt should follow the grain and have absolutely no knots. Pieces with knots can be cut into shorter sections for ribs later.

Holding the bolt in the drawhorse, use the drawknife (13) to shave the rough sides smooth and parallel to each other, perpendicular to the growth rings. The thickness of the bolt will determine how wide the finished weavers will be. The bolt should end up with the same thickness throughout its length and should follow the grain, even if there is a slight twist to it. A 3' section of 1x2 can be used to help support the bolt in the drawhorse (14).

The finished bolt is split into weavers using the splitting knife. Place the knife over the center band of vessels (15), striking the back of the blade with a stick of wood or small mallet to start the split. Split the bolt in half and then quarters (16,17). Continue this halving process until all the individual layers of the growth rings are separated (18,19). Extra-thick growth rings (about 1/8" or greater) can be split in half.

(It should be noted that this step of splitting out the weavers from the bolt is where most of the cut fingers happen. It is usually the index finger of the hand that is holding the end of the bolt. Never use the sharp whittling knife to split with. Don't push, but drive the splitting knife



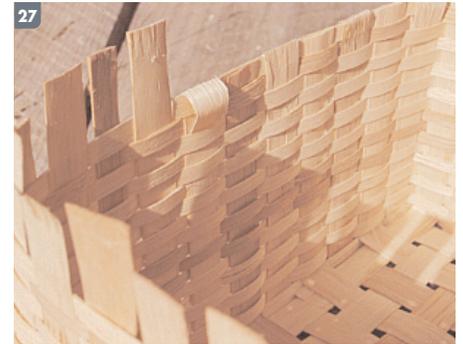
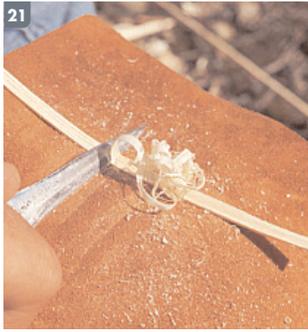
by tapping it with a stick or small mallet on all but the smallest pieces. Keep plenty of band-aids on hand, and know when it's time to get stitches.)

With the bolt all split out, the next step is whittling the weavers. Working in a seated position with a thick piece of leather placed over the right knee (left knee for the left handed), pull the weavers under the whittling knife, which is held still with the cutting edge facing

away (20). Work down the length of one side, then flip the weaver over and work the other side. The goal here is to smooth the faces, establish an even and correct thickness, and to shave off as much of the vessels as possible. Vessels are brittle and will crack when bent (21).

This whittling takes practice to get good at. The sharpness of the whittling knife and the angle of its bevel really make a lot of difference as to how well the work goes.

PHOTOS BY DUANE YESSAK



When the weavers are all whittled, bundle them up, saving the short pieces, and set them aside to dry. Under normal conditions, weavers only take a day or two to dry.

I usually work up about a fourth of the log into weavers of varying widths before I start making ribs.

Ribs are made in the same way as the weavers. These bolts will be shorter and their sides are drawknifed to specific dimensions, depending on what type of basket is to be made. Instead of being set aside to dry, ribs are used right after they are all whittled. I only make enough ribs for one basket at a time.

Good ribs are just a little thicker than the weavers that they will be use with. When whittling ribs, try to achieve a slight bevel to the outside edges.

In this whole process, very little measuring is done. While the length of ribs and handles are measured (sometimes just with fingers), the rest of the shaping is done by eye and feel. This is not to suggest that specific measurements are unimportant or arbitrary. What is important is the proportion or relationship between the relative size of the different pieces of a basket and how they work together.

The correct thickness is very important and varies with the size of the basket and its pieces. If a handle is too thick, it will be hard to bend, tend to crack at the bends, and push the sides out, misshaping the baskets. If a handle is too thin, it will be

weak and, along with the sides of the basket, will bend under a load. If weavers are too thick, they will be difficult to work with, resist snugging down tight to the previous run, and have a tendency to kink the ribs. Weavers that are too thin can crumple in the weave and lack the strength to hold the ribs in place. When ribs are too thick they are hard to bend up and have a tendency to crack there. They ignore the pull of the weavers, creating weak points and lumpy weaving.

It take time and experience to understand and develop this sense of proportion. The best way to get it is to first find out what too thick is like. Then find out what too thin is like. Just right is in between the two.

#### MAKING A FLAT BOTTOM BASKET

Flat bottom baskets are the easiest for the beginner to make. Also, they are the easiest to explain in text and pictures without being there in person.

The measurements in the following directions where selected as a good workable size for the beginner. The measurements can be adjusted if it seems appropriate. Sometimes the position of a certain knot in the log will determine the length of ribs.

For a flat bottom basket with a 10" x 10" bottom and 5" sides, make about 25 weavers 1/4" to 3/8" wide and about 45" long. Make two bolts for ribs 22" long and 3/4" wide. (For a basket with a rec-

tangular bottom, make one bolt longer than the other).

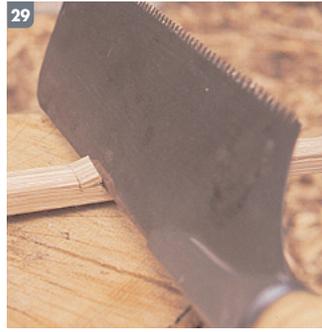
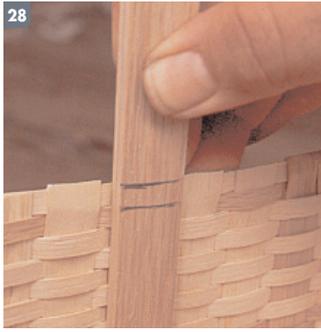
When the ribs have all been whittled, weave them together in a simple over-one/under-one pattern to make the bottom (22). Keep everything square and straight. Even with the ribs pulled tight together, there will be a space between them of about 1/4" square. This is as it should be, for this space between the ribs will accommodate the weaving up the sides.

The size of the finished bottom doesn't have to be exactly 10" x 10", but the portion of the ribs devoted for the sides will need to be at least 1" longer than the intended height of the side (this is for the turn-over). Also, the two sides that will hold the handle need to have an odd number of ribs, or else the handle will be off-center.

With the bottom completed, fold the ribs up to form the sides of the basket (23). Fold and crease firmly each rib, pressing it flat against the bottom. The crease in each rib should be in line with its neighbor and follow a line along the outer perimeter of the bottom (24).

Set this work aside overnight to dry before weaving the sides. It helps to set the bottom in something like a cardboard box that will hold the ribs upright in their correct position.

There are two methods for weaving up the sides of the baskets. The coil method uses a continuous spiral of weavers and works well for baskets that have sides that



curve, or when the available weavers aren't the right length. This type of weaving requires an odd number of ribs to make the spiral. This is accomplished by splitting one of the ribs down the middle, making it into two ribs.

Layering is the other method. This is a handy method when the weavers are long enough to go all the way around the basket plus overlap about 3" at their ends. The sides are built one row at a time and, along with it being easier to achieve a level top, there will be fewer complications when stitching on the rims.

To start weaving the sides, select a good weaver and dip it in water. (This is not to make the weaver more flexible; when the surfaces are wet the weaver will stay in place better.) If the weaver is a little rough it can be re-whittled at this point and then dipped in the water again.

Starting at any place away from the corner, weave over one rib and under the next. Continue like this all the way around the basket and overlap where you started by at least three ribs. The overlap should be done so that both ends of the weaver fall over the center of a rib and the weaver covers both of its ends (25). Start the next row at some place other than right above where the first row was started. Weave around the basket, going over ribs that on the previous row the weaver went under. Overlap as before and then start another row, each time

dipping the weaver in water first.

The first couple of rows are the hardest to keep in place, but after weaving up three or four rows, the sides will hold their own shape.

Weave the sides up as high as you want, making sure to leave at least an extra 1" at the ends of the ribs for turning over. It doesn't matter if the ends of the ribs are uneven. Set the basket aside overnight to dry.

Before turning over the ends, snug the weavers down by working around the basket, starting at the bottom, using the flat of the splitting knife blade. This will make for a tighter basket by picking up the slack from drying. Also, this procedure can be used to level the top.

With the weavers snugged down and the top level, it is time to turn over the ribs and lock in the top of the weaving. Every other rib end—the ones where the top weaver falls on the inside of the basket—is turned over. The other rib ends are cut off flush with the top of the side.

First, take one of the ribs to be turned over and, using the tip of a sharp knife, lightly score across the face of the rib on the outside of the basket in line with the top of the last weaver (26). Fold the rib end over the top of the side and press it against the inside of the basket. Mark on the rib end where the bottom of the third weaver down from the top is. Cut the end of the rib off there with a knife, a stout pair of scissors,

or a light tin snips. Tuck the end of the rib under that third weaver down from the top. Go around the top of the basket, doing the same to every other rib end (27). Dipping the end to be worked in water first will make this job easier.

#### HANDLES, RIMS, AND SHOES

To make a handle, split out a piece of heartwood about 1" to 1-1/2" wide (in line with the growth rings) and about 3/8" to 1/2" thick. To determine the length of this piece, measure up the side of the basket, add about 3"-4", double that sum (for the other side), and then add the distance across the top of the basket.

Drawknife this stick even and flat on all four sides, straight with the grain. If there is a slight twist to the grain, follow the twist while doing the drawknife work, and bend the stick straight afterwards.

The handle should be placed over the center rib on two opposite sides. These sides need to have an odd number of ribs. Place the stick over one of these center ribs on the inside of the basket with the end of the stick against the bottom of the basket. Across the inside face of the stick, mark two lines that correspond to the top and bottom of the top weaver on that side (28). If the weavers are very narrow, the notch can be as wide as the top two weavers. Do the same thing on the other side of the basket with the other end of the stick. These marks outline the notch



PHOTO BY DUANE YESSAK

**CLOCKWISE FROM TOP—**

The author standing with a collection of the baskets he has made. From the 6' tall fish trap to the small pint-size round baskets, white oak baskets have been made in a wide variety of shapes and sizes to help make easier much of the work on rural homesteads.

A large round “Goose feather” basket with handle and attached lid.

A gizzard basket made by the author.

Clothespins can be useful to hold the rims in place.

This same procedure is used for making handles to go on round baskets. Round baskets have foot rims stitched to their bottoms; flat bottom baskets have “shoes,” as can be seen on the basket in the opening photograph of this article.

Although they are seldom seen these days and could be considered optional, shoes are important. They support the bottom under load, protect the bottom edges and corners against wear, and maintain air circulation around the bottom to help prevent rot. Shoes are not any harder to make than handles. Their tapered ends slip into the weave from the bottom on the outside corners of the basket and fold over the top, just like the ribs. The middle point, where the two crosspieces intersect, should be the same thickness as the side rail, so that the basket will set level without rocking.

When the handle and rims are dry (about 2-3 days), the rims are stitched to the top of the basket, locking the handle in place.

Select a good long weaver that is not too wide to slip through the weave between the ribs. Dip the weaver in water and whittle it smooth and a bit thinner than usual. It is helpful to leave a few inches on one end thick for threading through the weave, and a few inches on the other end extra thin for the starting lap.

Starting at a convenient place away from the corners, slip the thin end behind the outside rim, over the space between the ribs, so that about 2" of the end sticks up above the rims. Fold this end over the inside rim, and poke the tip of the end through the space below the rim on the other side of the rib (31). Bring the long end that is on the outside of the basket up and over the thin end. From the inside, poke the thick end through the weave just under the tip of the thin end. Pull the weaver through to the outside, tightening



PHOTOS BY CHRIS QUILLEN

that will hold the inside top rim.

With a small saw, cut no more than half way through the stick on these marks. After making the cuts, flip the saw over, insert the back of the saw into one of the cuts, twist the handle of the saw, and snap the wood out from between the cuts to form the notch (29).

With both notches cut, go back to the drawhorse and drawknife between the notches, reducing the thickness of the stick there by not quite one half. Taper the ends of the stick past the notches down to nothing (30). This trimming of the handle is one of the few places I might use the drawknife with the bevel down.

On the ends of the stick, below the notches, slightly taper the sides and round the ends so that they will slip nicely into the weave. Also, I like to lightly bevel the outside corners on the top of the handle between the notches.

Bend the handle into a U-shape that is as wide as the basket. Starting about three or four weavers down from the top, slip one end of the handle down into the weave and push down until the notch is in line with the top weaver. Bend the handle and do the same on the other side. Holding the basket between the knees to keep the handle bent, take a piece of string and tie between the two sides of the handle just above the notches to hold the bend.

Split out and whittle two rims, one for the outside and one for the inside. The rims need to be long enough to go all the way around the top of the basket and overlap their ends. The rims should be as wide as the notch and not more than a 1/4" thick (33). The outside corners should be well-rounded. Bend the rims to fit the top of the basket, one facing in and one facing out. Trim the overlaps to lay flush. Set both rims inside the top of the basket to dry.

CLOCKWISE FROM TOP—

Ruth and Wayman Evans, who moved to the Ozarks from northern Georgia in the 1930s, brought with them the basket-making tradition of Wayman's family.

An old gizzard basket with some dyed splits.

An old gizzard basket the shape and size of a melon.

A gizzard basket well over 100 years old, as judged by its color. Finely woven with very close ribs, it represents at least a week's work for its maker.

the loop around the rims made at the thin end. Bring the thick end up and over again, and thread it through the weave on the other side of the next rib. Continue this way, stitching around the top of the basket, pulling each stitch tight.

Cross over the handle on the outside of the basket.

When close to the end of the weaver, thread the end down under three or four rows of the weave on the outside of the basket. Fold the weaver up and back-stitch under the weave. This secures the end of the weaver (32). Start again with another weaver just like with the first. Continue stitching around the top.

When the circuit is complete, reverse direction and stitch the other way, creating a criss-cross pattern over the previous stitches. Secure ends and add new weavers as needed. Secure the last end when the beginning place is reached (33).

The basket is finished.

Flat bottom baskets can easily be made to any given dimensions. The large baby basket has a 14" x 28" bottom with 12" sides that curve up to form an oval rim (34).

White oak baskets made with these traditional methods are very strong. Even with daily use, they should last a lifetime or more. The surfaces of the basket will darken and polish with time and use. The older a basket gets, the darker it will become. But the darkening with age is always a shade of brown, never of black or gray. Black or gray indicate the effects of mildew, not age. A really old basket—say, 100 years old—will be the color of coffee.

No special care or finish is needed. Water will not hurt a white oak basket if it is allowed to dry in the air. If a basket is allowed to remain wet for a long time, mold and mildew will start to grow and that will hurt the wood. (If used to catch fish, traps



PHOTO COURTESY OF HISTORIC ARKANSAS MUSEUM



should be left in the water where the lack of oxygen will prevent rot from taking hold.)

#### POSTSCRIPT

Most of the white oak baskets made for sale today are not made with the techniques that I have described in this article.

These traditional techniques were passed down from one generation to the next for perhaps two hundred years without changing much. Then, during the 1930s, the advancing industrial revolution brought new materials and a level of destabilization to the rural culture of America. Traditional crafts were abandoned for seemingly more practical methods.

About forty years ago, in an effort to help rural people earn extra income, the United States Extension Service promoted through pamphlets a technique for making white oak baskets that was much simpler and easier to learn than the traditional

methods. The process is similar down to the making of the bolts, but there the bolt is clamped into a long vise and the weavers or ribs are sliced off one at a time with a homemade tool commonly called a "split-knife." This technique is faster and doesn't require as much skill or practice.

When using a split-knife, the quality of the tree is not as important. Pieces made with this more modern "cut-split" method are not the same as pieces split out by hand, which always follow the grain. Cut-split weavers and ribs will have one smooth side, but the other side will be rough. This roughness will split out if wrapped to the outside.

Cut-split baskets can easily break under a heavy load and will not last anywhere near as long or wear as nicely as an oak basket made with the traditional methods.

*Owen Rein is a basket-maker, a chairmaker, and a teacher in Mountain View, Arkansas.*