# Turning Rotted Wood

*The dregs of your woodpile can yield some beautiful results*

by Robert J. Lentz

Some people cringe at the thought of using rotted wood for anything, especially for turning. Not me. I like it because I can get some really interesting figure and color, and I'm making use of wood that would otherwise be wasted.

I use the word *rotted,* but many woodworkers prefer *spalted* to describe lumber showing signs of decay. It's, really, just a difference of degree. The kinds of fungi that cause spalting (incipient decay) will eventually lead to rotting (advanced decay) if left unchecked. Much of the wood I use falls somewhere in between.

Wood has loomed largely in my life from very early on. As a youngster growing up in Pennsylvania (even the name of that state contains the Latin root of the word *sylva*, meaning woods), I used to go on rounds with my grandfather, a sawmill foreman. He'd choose the trees to be cut and hauled to the sawmill where he worked. Later on, I worked part-time with my father in my uncle's furniture store, where I saw how wood grain and color were blended to enhance the beauty of finished furniture. In college,

***Spreading the disease—****To promote fungal growth, cover the top of a log with shavings, and stack an already spalted piece of wood on top. Dampen the log with a hose. Signs of good fungal growth should appear within a few months.*



Photos: William Duckworth

I earned a forestry degree, and until I retired last year, I worked for the U.S. Forest Service on projects throughout this country and in the tropics.

Wood in any stage of decay responds differently to tools than lumber untouched by fungal agents. It takes some practice and some getting used to, but I think the results make it worthwhile. One note of caution: Turning decayed wood releases microscopic fungal spores into the air that can produce severe allergic reactions in some people. So you should wear a good-quality dust mask and ventilate your shop well. I've been lucky. So far, I haven't noticed any unpleasant symptoms.

## Find it, or make your own

I look for wood to turn anywhere I can find it. I've been known to ask road crews trimming trees on the highway for some of the waste pieces. A neighbor up the road from us, on the eastern shore of Chesapeake Bay, owns an old plantation set among acres of woodlands. He lets me glean pieces of wood lying on the forest floor, which is a great source for decaying wood.

Not the least of my supplies is in my backyard, where I have a good woodpile of hackberry, holly, maple, oak, persimmon and sweet gum. Some other species that work well are box elder, dogwood, yellow poplar and sycamore. Sometimes, I will promote the growth of fungi by standing a log on one end, covering it with wood shavings, wetting it down with the hose and placing an already spalted piece of wood on top of it (see the bottom photo on the facing page). The fungi seem to spread faster this way. During the summer, it helps to keep the wood in the shade. In a drought, I'll hose down the log occasionally to keep it moist.

The wood is ready to harvest when some of the bark peels off easily and signs of beetles or other borers are obvious. Mushrooms growing on the log are a good sign, too. The sapwood can be spongy enough to drive an awl into it with little effort, but you want the heartwood firm and with little rot. It's important that enough of the wood remains so that you can screw it firmly to a faceplate on the lathe. At this point, I nip 6 in. or so off either end of the log with a chainsaw and start to work on it right away.

## Turn the exterior slowly

I turn almost all my pieces mounted to the lathe on the end grain because the heartwood is usually the only part still intact enough to secure to the faceplate. Occasionally, I cut the log in half lengthwise and screw it to the faceplate. Either way, I flatten the spot for the lathe faceplate with a hand-held power planer and use a dozen or more 1½-in.- to 2½-in.-long hex-head lag screws (see the top photo), depending on the size of the blank I'm turning.

I always start out with the wood held between the head and tailstock centers of the lathe (see the center photo). The longer you can leave the wood between centers, the safer you are. Turning a piece with a large, open top will allow you to use the tailstock for support longer. If you're new at turning decayed wood, it's best to keep to this approach. Another precaution when turning: Never stand directly in front of the piece. Large chunks can break free and go flying.

With a rough blank, I set the tool rest a little below the center of the mounted piece—it seems to cut better in that position. I also readjust the tool rest as I remove the waste, keeping it as close to the surface as possible. I start turning at 100 rpm, using a ½-in.-deep fluted bowl gouge mounted to a shovel handle for extra leverage and control. The gouge is ground back to a steep angle

***No such thing as overkill**—When mounting a decayed piece on the lathe, the author drives a dozen or more 1½-in.-long lag screws through the faceplate into a small log of sweet gum.*


***Start the lathe at a slow speed** when roughing out the shape with a gouge. Soft, spongy wood cuts differently from sound lumber: It chips or breaks more than it cuts.*


***Grinding as an intermediate step**—After rough-shaping with the gouge and before sanding to a final smooth shape, the author sometimes uses a grinder with 60-grit paper to remove deep pits and to refine the shape of a vessel.*

***Keep the piece between centers as long as possible.*** *The author hollows out the interior, and then removes the tailstock. The waste in the center breaks off easily.*

on both sides. Decayed wood is more likely to vibrate because of the varying densities in the piece, so you have to go slowly.

After the piece is rounded over to a fairly uniform shape, I crank up the lathe to 250 or 300 rpm. I shape the base first, starting at the midrib, or center, of the piece and working toward the bottom end at the faceplate. I prefer to leave a large waste block here to support the piece when I work the inside.

After roughing out the base, I work toward the rim, or open end, starting at the midrib. For the final rough shape, I turn the gouge on its side to reduce the angle of cut. This gives me smoother results on the outside of the piece. I clean up the remaining rough, pitted surfaces on the exterior with a skew or a hand grinder loaded with a 60- or 80-grit disc (see the bottom photo on p. 59).

## Define the rim, and then turn the interior

I square off the top using a bowl gouge, and then I use a ½-in. roundnosed scraper ground along the left side to shape the rim. I set the thickness of the bowl at this time, using the same tool, by cutting the inside of the piece toward the rim. Because the walls of bowls made from decayed wood are weak, they must be a minimum of ¼ in. to ⅜ in. thick. And when sanding, more material will need to be removed to get rid of pits that result from turning.

I switch to the ½-in. bowl gouge to begin removing waste from the interior, keeping the piece held between centers as long as possible (see the top photo). Use calipers to check for uniform thickness. When there's not much left of the center waste, I turn off the machine and pull the tailstock out of the way. The waste breaks off easily. I position the tool rest inside the bowl, reduce the speed to 150 or 200 rpm and continue to gouge out the rest of the inside until I reach the bottom. I switch to a ½-in. scraper to clean up the inside upper surface of the bowl. I clean the inside bottom surface with a 1-in. roundnosed scraper, sharpened about 1¼ in. along the left side. I leave the waste block intact, so the piece can be remounted on the faceplate for final sanding.

## Drying, fast or slow

If the bowl is small enough, I dry it in a microwave oven. My wife isn't too thrilled because decayed wood at this stage sometimes releases a really foul odor, and it can still contain live insects—but not for long. I set the microwave at full power, bake for two minutes and follow that with four to eight minutes at defrost, or 50% power. I follow this procedure several times, letting it cool between cycles.

You can also air-dry the piece. Start by putting it in a fairly damp area, like the basement, and moving it periodically toward a drier place, like the attic. This process takes several months. Use a moisture meter, if you have one, to determine when you've reached an acceptable moisture level for your area, anywhere from 6% to 11%. Decayed wood seems to undergo less stress in the drying process than sound lumber. But you should inspect the piece periodically for checking. I use cyanoacrylate glue for minor repairs.

## Back to the lathe for final sanding

After the bowl has dried, I remount it to the faceplate and sand it to final shape, smoothing out the pits. I start on the outside and finish

***A flexible shaft will reach inside.*** *This homemade tool (a drill chuck holding a sanding drum on the end of a flexible shaft) makes shaping and cleaning out the inside surfaces easier.*

***Cyanoacrylate for fixing repairs—****The author prefers fast-setting Hot Stuff adhesive for its strength. He mixes mineral oil with sawdust or shavings from the turned piece to maintain a good color match and then applies the glue over that.*

with the inside. I've rigged up a flexible shaft that's driven by an old washing machine motor hung from the ceiling. A sanding drum fits in a chuck at the end of the shaft for cleaning up the inside of turned pieces (see the bottom left photo on the facing page).

Decayed wood remains very delicate—especially at the rim—so repairs may sometimes be required. I mix mineral oil with some of the shavings, as shown in the bottom right photo on the facing page. I use that mixture as a kind of filler that will make a good color match when the piece is finished. After that, I cover the repaired area with cyanoacrylate glue. I like this glue because it's strong, dries quickly and seems to hold up well over time.

After sanding the inside, I cut the bowl from the waste block with a handsaw (see the photo at left below). Then I remount the bowl on the lathe by pinching it between the tailstock and a ½-in. steel rod chucked into the headstock. I installed an old pulley onto the end of the steel rod and glued some foam to it as a protective pad.

I complete final sanding of the exterior by machine and by hand. I have another padded foam disc that I attach to the flexible shaft (see the center photo below), sanding with 80- through 220-grit paper to finish the exterior. At this point, the lathe serves only as a vise. I turn the bowl around by hand to complete the sanding.

## Finish with a polish

I start the finishing with a few coats of mineral oil, rubbed in with 220-grit wet-or-dry sandpaper. I follow that with several coats of Deft semigloss clear wood finish, allow that to dry overnight and buff with 0000 steel wool. I repeat that process over a period of several days until I get a deep, lustrous finish. After the last coat has dried for several days, I buff the finish, using cotton pads soaked in mineral oil and rubbed with tripoli polish. □

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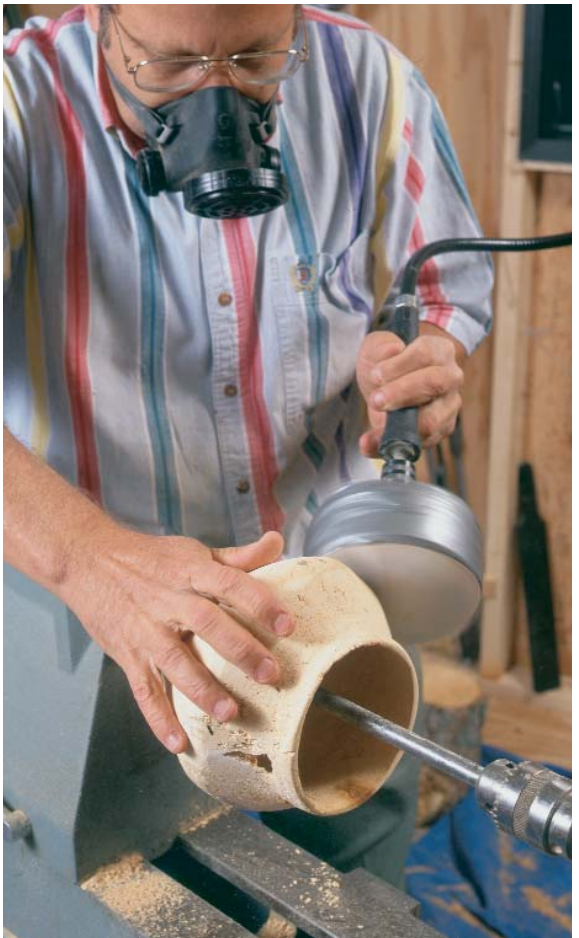
*Robert J. Lentz owns Chesapeake Woodart, in Pungoteague, Va., where he makes and markets one-of-a-kind turned vessels.*

***A handsaw is safer than a parting tool*** *when separating the bowl from the waste mounted to the faceplate. The author cleans up the cut on a disc sander so that the bowl will sit flat.*



***The lathe serves as a vise*** *for the final sanding stage. The bowl is held securely by a steel rod (with a padded blunt end) mounted into a chuck on the headstock. Rotate the bowl by hand.*

***Polishing to a final luster—*** *After several coats of mineral oil and hand-rubbed brushing lacquer applications, the author buffs each piece with tripoli polish applied to a set of heavily oiled cotton pads. He recommends an occasional coat of mineral oil to refresh an aging finish.*