American Sycamore

Beautiful looks, unstable behavior

by Jon Arno

Sycamores boast big leaves and bold figure. *The trees have a variegated bark that sheds in sinuous strips, and when quartersawn, the wood looks like lacewood. Sycamore turns crisply and carves like cherry. Here, darker heartwood veneer contrasts with a sapwood board.*

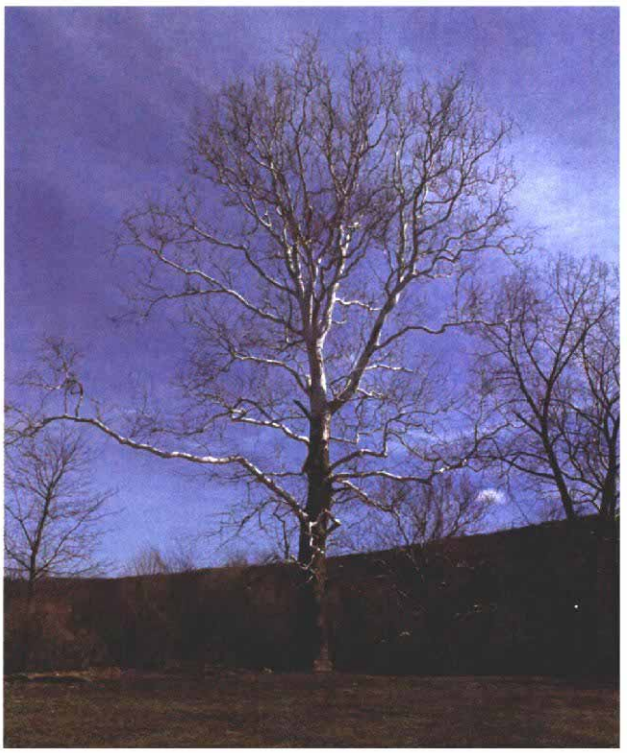
Photo this page: Robert Marsala

Sycamores can be giants, reaching heights of more than 100 ft. and diameters in excess of 10 ft. Late to leaf in the spring, their majestic, gnarly branches and patchy, ash-gray bark have led sycamores to be called "ghost trees" (see the photo below). But for woodworkers, it can be a challenge to craft the wood into lasting projects, That's because sycamore can be as unstable as it is beautiful. To better understand and use this giant of the forest, let's look first at its history and its name.

The roots of sycamore

Fossil records show that the sycamore family, Platanaceae, was a contemporary of the dinosaurs. These ancient tree specimens spawned at least 11 of the modern sycamore species, including the American sycamore, *Platanus occidentalis.*

Practically unchanged, American sycamore's rapid growth rate, impressive size and life expectancy of as much as 600 years suggest that it should have become an important timber species in North America. In terms of biomass, American sycamore is arguably the largest hardwood tree in North America. And sycamore's range is extensive, running from northern Florida to central Michigan and from eastern Texas to Maine. But sycamore is not abundant in upland forests. Its lack of shade tolerance and need for rich, moist soil cause it to congregate along river banks. Consequently, the ample sunlight of a river bank habitat lets it form low branches, diminishing the value of its logs. Few of the old-growth stands survived long enough to be used as lumber because the trees were cut down and burned by early settlers clearing land for farming.



Without its leaves, a sycamore appears ghostly. *With its light gray and dark gray bark illuminated by a late afternoon sun, this 5-ft.-dia. tree stands like a dead sentry.*

American pioneers commonly called sycamore "buttonwood" because its woody fruit could be quickly fashioned into crude but functional buttons. Sycamore is the accepted name in America today, but the same tree in Europe is called plane tree. In England, the name *sycamore* refers to *Acer pseudoplatanus,* which is a member of the maple family. Much whiter in color and often having curly figure, the maple variety has been used for furniture by European cabinetmakers since classical times.

Appearance: pleasant to stunning

In contrast to the English sycamore/maple, American sycamore is deeper in color. Wood cut from the tree ranges dramatically from dark heartwood to light sapwood (see the bottom photo on p. 92). The tangential surface of flatsawn boards (growth rings parallel to the face) reveals a subtly pleasant figure freckled by a multitude of light-yellow ray flecks. Often, the flecks are partially obscured by the wood's overall yellowish-gray color and occasional warm reddish-tan highlights. However, the radial surface of quartersawn boards (growth rings perpendicular to the face) shows plentiful rays exploding as interwoven lustrous yellow bands to produce a bold lacewood-like figure that is truly stunning (see the photo on the facing page). It is this lacewood figure that is usually sought in sycamore veneers.

Properties: nice to work, prone to rot

To the cabinetmaker, the American sycamore has a blend of unique virtues. It's a medium-dense wood with an average specific gravity of 0.46 and is about as easy to work as cherry (0.47). And like cherry, maple and birch, sycamore has uniform pores that are evenly distributed, though they are slightly coarser. Sycamore machines exceptionally well in turning, shaping and planing. It holds fasteners well, polishes smoothly and readily accepts adhesives, stains and finishes (see the photo at left on p. 93). It has good elasticity and outstanding resistance to shock. And sycamore's abundant rays, besides contributing to its appearance, add to the wood's strength and high resistance to abrasion and splitting.

Given that it has so many positive features, sycamore has long been popular for mass-produced articles, such as brush backs and handles. In fact, sycamore can be virtually interchangeable with beech, and at a glance, these two woods are often confused. But beech is heavier and harder and has a higher tannin content than sycamore. Beech usually has a tan to rusty-brown color and fewer and darker rays.

Sycamore's toughness in veneer thicknesses makes it ideal for woven baskets and food containers. In thicker sections, sycamore makes good drawer sides, and it is suitable for end-grain butcher's blocks. The wood's resistance to abrasion also makes sycamore good for pallet skids, and its ability to absorb shock allows it to perform well for such different things as railroad ties and gunstocks.

But sycamore is a bad choice for exterior woodwork because it is prone to rot, even in certain interior cabinet situations. To prevent items made of sycamore from rotting, make sure the wood is thoroughly finished and kept dry. Also, sycamore must be seasoned carefully to avoid blue staining.

Instability: numbers are misleading

Sycamore sounds like it would be an irresistible cabinetwood. Especially because it comes in wide planks and at low cost. And its quarter-sliced veneer has been prized for marquetry and inlay work for centuries. But, alas, sycamore's greatest handicap is its lack of stability.

With a 7% rise in moisture content, a 12-in.-wide sycamore board will expand .14 in. radially and .25 in. tangentially. Why sycamore is so prone to move is a real mystery, not readily apparent by examining its shrinkage relative to other major cabinetwoods (see the chart on p. 93). The amount a given wood shrinks during the curing process is usually a good indication of how stable the wood is when dry. The more it shrinks, the less stable it will be. But

Photo this page: Jonathan Binzen

Photo: Michael Lamb

When oiled, sycamore looks rich. *To protect surfaces in his combination valet and vanity, Arnold d'Epagnier used linseed and tung oils, then wax.*

Using and finishing sycamore

by Alec Waters

For all of sycamore's beauty and desirable qualities, it's not used much. Perhaps its deserved reputation as an unstable wood limits its commercial availability. After speaking with sawyers, cabinetmakers and *FWW* contributors for advice on cutting, milling and finishing the wood, I'm convinced that sycamore is destined for wider acceptance.

As Pennsylvania sawyer and lumber dealer Sam Talarico put it: "I've been trying to turn woodworkers on to sycamore for 25 years. Most are skeptical of its Achilles' heel instability." To minimize movement problems, Talarico recommends only quartersawn sycamore. Plainsawn, he says, is almost worthless. "When we cut at the mill, we actually do true quartersawing, which means we constantly turn each log on the carriage to keep the grain vertical (90° to the wide faces)." Although this is more wasteful, it yields wood that's more stable and more figured. Broad rays like those in quartersawn white oak are typical, though sycamore's are shorter. Good quartersawn sycamore looks like coarse Australian lacewood, but sycamore's grain is finer and works more easily.

Talarico mentioned other things to watch out for with sycamore. "If you're dealing with big trees that have fallen, you're likely to have wind shakes in the wood. Like poplar, sycamore is prone to sticker stain, especially when wet. Other markings, caused by mineral steaks, worm holes or fungi stains are common, too."

To keep sycamore from moving once a piece of furniture is assembled, finish it quickly and thoroughly. Arnold d'Epagnier, a Maryland cabinetmaker, said: "To prepare sycamore for a finish, I usually plane or scrape the surfaces, but if the figure is quilted or curly, it has to be sanded. Sycamore should be finished soon after surfacing because the wood becomes fuzzy. You have to use many coats of finish because the pores really soak it up. On a vanity (see the photo at left), I rubbed on multiple coats of oil and then waxed the wood, which really brings out sycamore's wonderful lace look. Similarly, for a table (see the photo at left on the facing page), I applied two coats of sealer followed by two coats of water-based urethane finish. Rubbing out the topcoat gave a nice satiny luster. The thick finish acts like a plastic coating that is durable and reduces moisture exchange."

Chris Minick, a finishing chemist, agrees that sycamore needs lots of finish. "Because sycamore is porous, like basswood and black willow, it absorbs finish deep into the surface," he said. "I use multiple coats of finish, starting with several coats of shellac as a sealer, followed by a couple of topcoats. I equally coat all surfaces, even those

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sycamore's volumetric shrinkage of 14.1% (though high) compares well to maple (14.7%). Yet maple is more stable than sycamore.

But at least it cures evenly, and thanks to similar amounts of radial and tangential shrinkage, checking (cracking) is not normally a problem.

Best uses: slice it thin, hold it down

Sycamore performs well when it is used in narrow components or when physically held in place, such as in glued-up strips. Sycamore veneer when bonded to a stable substrate also performs well. In addition, sycamore is suitable when its movement is neither critical nor noticeable. For example, it serves well in one-piece, shaped objects, such as turned kitchen utensils that can distort without impairing their use. But as a general-purpose cabinetwood, sycamore is best employed in the form of quartersawn boards. Fortunately, in the case of sycamore, this grain orientation also reveals the wood's most attractive, ray-dominated figure. □

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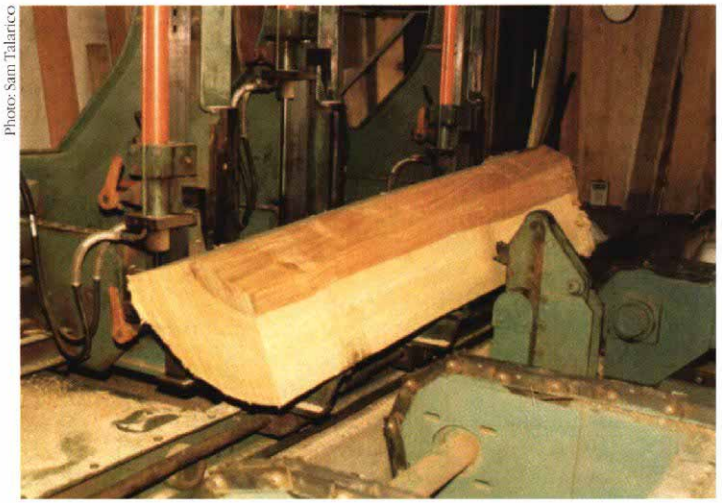

Photo: Sam Talarico

Quartersawing yields the best sycamore stock. *When quartersawing sycamore on a band mill, the sawyer keeps the log's growth rings at right angles to the face of each board. This method produces more stable wood and fuller ray flecks.*

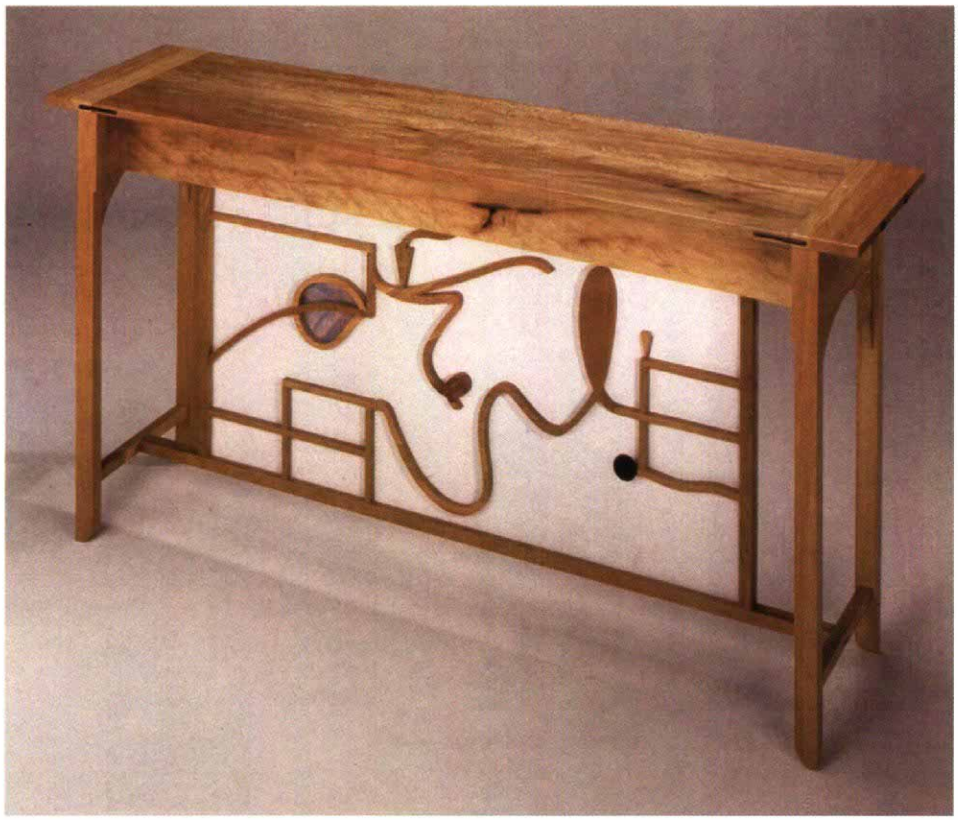

Photo: Michael Latil

Heavy finish stabilizes the wood and brings out the figure. *Sycamore's subtle defects complement Arnold d'Epagnier's* Shoji Table. *Because the wood soaks up finish, he first applied two coats of sealer. Then he sprayed on two coats of water-based urethane.*

unseen places. This reduces moisture exchange and makes the wood more stable. The real trick is to let each coat dry thoroughly (several hours to overnight). Although the coating may look dry right away, inside the wood it is still wet. If you finish over this, the undercoat may shrink as it eventually dries. It may also bubble the topcoat as solvent evaporates from below. But by slowly building up a thick finish, the polymers penetrate and sort of caseharden the wood, which protects it and adds depth to the finish." □

Alec Waters is an associate editor for Fine Woodworking *magazine.*

Photo: courtesy of Pritam & Eames Gallery

Heralding sycamore's virtues*—Hank Gilpin designed a sycamore and walnut compact-disc rack to encourage the use of lesser-known woods. The case is part of a series of pieces using overlooked species.*

Comparing stability of sycamore and common cabinet woods

	Shrinkage (percent from green to oven dry)			
Species	**Tangential**	**Radial**	**T/R Ratio***	**Volumetric**
Cherry (*P. serotina*)	7.1	3.7	1.92	11.5
Maple (*A. saccharum*)	9.9	4.8	2.06	14.7
Red Oak (*Q. rubra*)	8.6	4.0	2.15	13.7
Sycamore (*P. occidentalis*)	8.4	5.0	1.68	14.1
Walnut (*J. nigra*)	7.8	5.5	1.42	12.8

*The ratio between tangential and radial shrinkage is normally a good indicator of stability. A ratio greater than 2:1, especially when combined with high volumetric shrinkage, suggests instability but is not an infallible predictor. Sycamore scores better than it performs in practice.

Sources of supply

A&M Wood Specialty Inc., 358 Eagle St. North, PO Box 32040, Cambridge, Ont., Canada N3H 5M2; (519) 653-9322

Homestead Hardwoods, 2111 South Messick Road, North Bloomfield, OH 44450; (216) 889-3770

Landmark Logworks, Route 1, Box 36C, The Plains, VA 22171; (703) 687-4124

Talarico Hardwoods, Route #3, Box 3268, Mohnton, PA 19540-9939; (610) 775-0400

Willard Brothers, 300 Basin Road, Trenton, N.J. 08619; (609) 890-1990

American or English veneer

ARI, 906 Poplar Place South, Seattle, WA 98144; (206) 325-1703

Certainly Wood, 11753 Big Tree Road, Route 20A, East Aurora, NY 14052; (716) 655-0206

Constantine, 2050 Eastchester Road, Bronx, NY 10461; (800) 223-8087