The Mysteries and Magic of Cherry

A look at America's premier cabinetwood BY JON ARNO

f the hundreds of woods I've spent a lifetime studying, none has so captivated me as cherry. Even now, when I bring it into my shop, its pleasant scent, subtly warm appearance, and satiny feel soothe me with a sense of familiarity and comfort. And yet every time I choose it for a project, my confidence is shaken. This species often seems to have a hidden personality—always friendly but never totally forthcoming. There are, of course, tangible and physical reasons behind the mysteries and magic of cherry; at least, I've discovered a few of them.

In many ways, our native North American black cherry (*Prunus serotina*) is a nearly ideal cabinetwood (see the chart on p. 66). Its density, texture, stability, durability, working properties, color, and figure are as beckoning to some woodworkers as a cold beer on a hot summer day. And history would seem to second that conclusion, because cherry has figured prominently in American furniture. Museum-quality pieces turned out by skilled 18th-century cabinetmakers are among the finest examples of American craftsmanship of that period. Also, the Shaker craftsmen of the 19th century, who certainly knew a thing or two about practicality and function, chose cherry for much of their best work.

So, how could the beginning woodworker go wrong in selecting cherry? Actually, it's surprisingly easy. In experienced hands, cherry yields results of uncommon beauty, and it deserves its place as one of the world's most prestigious cabinetwoods. But learning the whims and ways of cherry is one of woodworking's great challenges, and cherry bestows its many charms only upon those who toil for the privilege.

Why the wood can vary so much

You never can count on any two shipments of cherry being quite the same in either color or texture. Nor can you ever completely count on its consistency from board to board within a given shipment. While one board may display the classic flesh-pink color and subtly intricate figure that is most common to this species, another will reveal a noticeably wavy curl in the grain. The next may be peppered with jet-black gum pockets, while still another will be slightly coarser textured, perhaps even flaunting decidedly greenish or chartreuse highlights. And if you're tempted to blame all of this inconsistency on sloppy handling and sorting at the mill, you'd probably be wrong. In fact, much of the varied lumber in each shipment you receive actually may have come from the same log.

The average cherry tree lives a hectic and stressful life because it is what ecologists and foresters



Highlight the curl. Clockmaker lan Ingersoll finished this curly cherry clock with an oil-andvarnish mixture to bring out the wood's figure.

refer to as a nurse tree. It performs the role of being one of the first species to get established when forest lands have been clear-cut or burned. Its roots help to hold the topsoil against erosion, while its foliage provides a sparse canopy for the retention of moisture and the protection of the seedlings of other species. In other words, cherry is a transitional player in the natural process of reestablishing a mature forest because it serves the needs of other species that will overtake it eventually. It helps to jump-start the reforestation process with its ability to disperse very quickly. Because birds eat the fruit and then pass the pit intact through their digestive systems, cherry arrives where it's needed, so to speak, by airmail. Given this symbiotic relationship with birds, cherry can become established on fallow land even though the

come established on fallow land even though the parent trees may be located many miles away. In fact, so mobile is this species that pockets of it exist along bird-migration routes as far south as Central America. Also, cherry grows rapidly in full sunlight, but it is exceptionally shade intolerant

You don't just work cherry; you compete with it. You dodge its deceptions while you snare its charms.

and doesn't grow tall enough to compete for sunlight in the canopy of a forest with other more robust species like maple and oak.

What all this means from the woodworker's perspective is that a typical cherry log represents a microcosm of perpetual change. Because a cherry tree spends its life struggling in an immature forest setting, exposed to constant shifts in the source of light and the ever-increasing competition from other species, it is in a state of constant adjust-

ment. All trees compete for their place in the sun, but cherry virtually never wins. And as the surrounding canopy closes in above them, cherry trees often are weakened to a point where they are susceptible to infestation by insect larvae, triggering their natural defense mechanism to produce more gums. Those gums contain chemicals that affect cherry's pigmentation, its patina-forming properties, and its potential toxicity—all topics of considerable importance to the woodworker.

A color like no other

The chemical compounds produced by cherry, which wood technologists refer to as extractives, are the building blocks of the wood's

AN IDEAL CABINETWOOD

	PROPERTIES Cherry is unique among cabinetwoods in that it is the only major timber belonging	Re Con
	to the Rose family (<i>Rosaceae</i>). Its darker color, more pronounced figure, and unusual, light- stimulated patina also make it unique among the world's most prestigious timbers.	
	Density: Medium	WHER
	Stability: Good	grows i
	Texture: Fine	States.
	Porosity: Diffuse	help of
	Durability: Good	distrib
L		



WHERE IT GROWS

North American black cherry primarily grows in the eastern half of the United States. Cherry trees reproduce with the help of birds that eat the fruit and distribute the seeds during migration.

LEAF PATTERN

Leaves are bright green, lanceshaped with serrated edges, and taper at both ends to a sharp point. Fruit is small (less

than ½ in. dia.) and grows in clusters of six to 12 cherries, which become a dark, reddish black as they ripen in the early autumn.

unique pigmentation. As with all species, once the living tree produces these extractives, they are transported inward through the rays, where they are stored in the inner wood tissue that eventually becomes heartwood. It is the greater concentration of these extractives in the

heartwood tissue, and their tendency to form more complex com-

pounds called polymers, that produces the wood's natural heartwood color. With most species, these polymers develop more or less completely while the tree is still alive. They may oxidize and undergo subtle changes once the log has been milled, but the dominant pigmentation of most woods is relatively stable once the heartwood develops.

While cherry's extractives do polymerize to some degree in the living tree and give the wood its initial flesh-pink color, they remain exceptionally reactive, even after the log has been milled. Unlike most other species, the extractives in cherry are photosensitive. They tend to darken, rather than fade, when exposed to light. There

A 200-year-old patina. This Federal candle stand was made in Connecticut, circa 1790-1800.

are a few other woods with photosensitive extractives—purpleheart, for example—but in most cases, the exposure to light causes a rather quick and complete conversion of their extractives into relatively stable pigments. Cherry is different: While the initial darkening effects of light can be seen almost immein the shop. As is the case with walnut, mills often steam cherry to make its color as uniform as possible. The heat generated by steaming darkens the sapwood in both species, but it seems to work more quickly and permanently with walnut because the extractives already present in the sapwood are more immediately and indelibly converted. At least up to the level of its raw, flesh-pink color, steamed cherry has this same initial advantage. However, the benefit is fleeting as its less stable, long-term patina-forming process kicks in.

I'm not certain whether the ultimate longterm color of cherry is more dependent upon differing quantities of extractives present

The patina that cherry develops is one of the key reasons cherry has such a dedicated following among experienced woodworkers.

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strong light eventually will bleach the

pigments in cherry, as it will in all

woods, but it is a long time coming before it happens to cherry.

The patina that cherry develops is one of the key reasons cherry has such a dedicated following among experienced woodworkers. The beautiful translucence and ever-darkening depth of color can't be faked, and there's no substitute. But getting the most out of cherry isn't an easy task, either when processing it from the log or when using it in the sapwood versus the heartwood, but there is no permanent fix that will make cherry sapwood keep pace with the heartwood as the color changes over time. Woodworkers skilled in the art of touch-up staining can do wonders to mask the initial contrast between sapwood and heartwood, and the use of finishes that block ultraviolet light will retard the patina process, but nothing short of perpetual darkness will stop it. For this reason, most experienced cabinetmakers are a little more particular in avoiding cherry sapwood than they might be with other species. To be sure, there is nothing wrong with using cherry that contains sapwood, if your objective is to achieve a strikingly variegated appearance. But when you intentionally employ this artistic license, it is important to maintain a sense of balance so that the sapwood streaks are both plentiful enough to be an obvious part of the composition and well distributed throughout the piece.

From an artistic perspective, variegated cherry is just one of several legitimate options this species offers. I can think of at least four, or possibly five, subtly distinct cherry cabinetwoods: first, this variegated look, with its sharp contrast between heartwood and sapwood; the equally rustic look offered by the spotted or streaked appearance of gummy stock; the classic, mellow warmth you get when using top-grade, clear heartwood; and the fancier and more complex effect that comes from using a pronounced curly figure.

The fifth incarnation of cherry, and one of my personal favorites, is when the stock contains vivid greenish or chartreuse highlights. This unusual trait typically is seen in conjunction with stock that is a little coarser textured than normal and also is somewhat lighter in weight. It may in part be the product of cherry trees that have experienced spurts of unusually rapid growth, possibly in combination with something in the soil that interacts with one of cherry's extractives to create the greenish highlights. But whatever causes it, this trait is beautiful to my eye. The highlights are fugitive, and stock with this unique pigmentation never seems to darken quite as deeply as typical old-growth cherry heartwood. As with any of the other four variations this species yields, it is important to sort the stock carefully and use whatever form you choose exclusively in any given project.

Admittedly, for the small-time avocational woodworker, being extremely picky when it comes to stock selection isn't always an easy thing to do. Most hardwood retailers will allow their customers some reasonable freedom in sorting through their inventories. But in my experience, the best way to buy cherry is in the largest quantity you can afford. Because of the variability of cherry, I cannot overstress the advantage of having an abundance of it on hand in your shop while a project is in progress. (For more about cherry, visit www.fine woodworking.com.)

Jon Arno retired from a family-owned lumber business and now spends his time writing and working on small projects in his basement shop.

The quirks of working with cherry

No other wood is so demanding in every step of the woodworking process, from start to finish. Each cherry board needs to be chosen carefully at the beginning of the project. The woodworker who buys too little or miscuts a piece is in trouble. While the wood's density and texture give it remarkably good machining and shaping qualities, cutting the joinery demands considerable con-



Cherry burns easily. The heat generated from sawblades, router bits, and even sandpaper can burn the gums in cherry, leaving marks on the surface that are difficult to remove. For that reason, Arno prefers scraping rather than sanding the surface to prepare it for finishing.

centration and care. Cherry's brittleness causes it to chip more easily than most woods, and its natural gums burn almost instantly when exposed to friction from sawblades and router bits. To minimize heat buildup, use exceptionally sharp blades and bits. For the same reason, it is absolutely critical that the stock be passed at a steady rate of feed into shapers, routers, planers, jointers, and even sanders. Just a fraction of a second of

Color changes happen fast. This piece of cherry was partly covered with duct tape and left outside for four hours.



stall in the rate of feed, and cherry presents you with virtually indelible and very dark burn marks. To avoid them, I prefer scrapers when working with cherry and use only a fine abrasive (220grit aluminum-oxide paper) to remove the last vestiges of light scraper marks at the very end of the final prep-for-finish process.

The final finishing process also cannot be taken lightly. While some cherry has flamboyantly curly figure, virtually all cherry has a subtly undulating grain. This sneaky feature of the wood's inconsistent anatomy is often missed by the inexperienced eye. However, the resulting variation it produces in the wood's porosity can cause cherry to accept finishes unevenly. Even clear varnishes or penetrating oils can produce blotches or patches of uneven luster. And then there is the mystery of cherry's light-sensitive patina-forming process: Patience pays a big reward to those who are willing to wait for the wood to darken from its exposure to light. For more on finishing cherry, see *FWW* #130, pp. 46-49.