

# Basswood, Linden or Lime

By any name, this wood,  
a carver's delight,  
proves that it's sometimes good  
to be weak and bland

BY JON ARNO

To understand the virtues of basswood, you must adopt a totally different mindset. A wood need not be strong, durable and stunningly beautiful to fulfill a role in fine woodworking, and you could find no better example than basswood to prove that point.

A quick review of basswood's technical properties makes you wonder why anyone would want to use it. With an average specific gravity of only 0.32, it is the softest and weakest of our commercially important domestic hardwoods—softer even than our softest white pine, which weighs in at 0.34. Basswood's extremely fine and even texture makes it appear to have no figure, and its anemic, off-white to creamy-tan color is downright dull. Its average volumetric shrinkage of 15.8%, green to oven dry, is exceptionally high, and its resistance to decay is so poor that it might best be described as pure fungi fodder when used in any exterior application. And though all of this seems to suggest that basswood, sometimes called linden or lime, is a real loser, nothing could be further from the truth.

## A wood with one special purpose

No other wood is so perfectly suited for intricate carvings and detailed scroll-saw projects. Basswood is so soft and its texture so fine that it yields to a cutting edge with hardly any effort applied. Its ability to hold sharp detail is outstanding, and the freshly sheared surface is so smooth that it is comparable to sculpted marble. Very little about basswood suggests that it is even wood. In fact, a painted basswood carving looks more like glazed ceramic. But this deception melts the moment you pick up the carving and sense how light in weight it is.

In this respect, the very essence of basswood is that its benefits are contrary to those of other woods. While a cab-



metmaker typically selects a wood because its natural beauty will enhance a completed project, sometimes the objective is to choose a wood that offers the least visual competition. This is often the case in carving, and few woods are as masterful as basswood in playing this unobtrusive, supporting role.

### The basswood family tree

Four species of basswood are native to temperate North America, but only two of them are commercially important timbers: American basswood, *Tilia americana*,

and white basswood, *T. heterophylla*. The woods of these two species are so similar that the lumber trade does not segregate them. Also, scant evidence exists to distinguish these two species from the 20 or so Old World lindens that belong to the *Tilia* genus.

It may seem rational to conclude, therefore, that the basswood family is a rather homogeneous clan, but this is true only of the north-temperate genus. The basswood family, Tiliaceae, is primarily tropical in distribution, totaling about 40 genera and nearly 400 species, including vines and herbs as well as trees. From a broader botanical perspective, hints of its kinship with the cocoa family, Sterculiaceae, can be found in its chemistry.

### Historic and modern uses

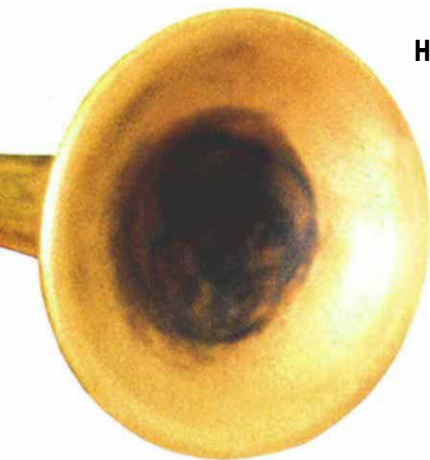
Settlers on the American frontier once used the oven-dried flowers of basswood for making a cocoa-like tea. Also, the honey produced

when bees have access to basswood groves has a unique and much-prized flavor. In Europe, the flowers of the linden—also called the lime tree—are used to produce lime-flower oil, an ingredient found in perfumes. Another common feature of many members of the basswood family is the tough, stringy inner bark, called bast. The bast fibers of European linden and American basswood were used for making rope and coarse floor mats. The "bast" in the American name for the tree probably stems from this now, almost forgotten bast industry.

Considering the lack of strength and durability of the lumber, it is surprising how important a role basswood and its European cousin have played in our woodworking tradition. Linden was the wood of choice for the inspired religious carvings found in Gothic cathedrals and in the royal palaces of the Renaissance. In the 19th century, basswood was the source material for beautifully carved carousel horses and decorative circus wagons that charmed a generation of children and that draw crowds even today. It is still one of the preferred woods for piano soundboards, and its cabinetmaking uses have changed little since the 18th century. No synthetic or composite material has managed to replace basswood as a practical choice for drawer dividers, interior panels, scrollwork and light-duty substrates for veneered projects. Basswood comes to mind when a woodworker needs a relatively inexpensive wood that can be easily worked and that will perform well in a structurally undemanding role.

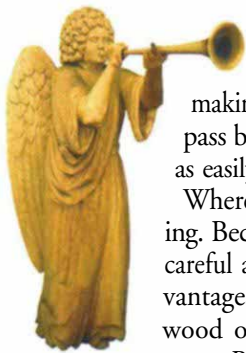
### Basswood substitutes

A multitude of other woods vie with basswood in its various roles. Yellow poplar, aspen, red alder and soft maple are relatively interchangeable with basswood as secondary woods in many cabinet-



**Basswood is heavenly.** Master wood-carver Fred Wilbur carved these four angels (left and right) as a commission bound to adorn the organ of a church in Savannah, Ga. He finished the figures with an oil and varnish mix and gilded the trumpets. Carvers prize basswood for good reason: It peels off the edge of a chisel effortlessly and crisply (top photo).





making applications. Most of them surpass basswood in strength, but few are as easily shaped and finished.

Where basswood truly excels is in carving. Because the carving process involves careful and tedious effort, fairly subtle advantages in the working properties of one wood over another are of great importance. But even within the carving world, basswood has its rivals, and some of them have cornered a private segment of the market: tupelo, or black gum, buttress-cut stock for duck decoys and olivewood for chess sets.

Also, a few other woods stand out as important carving and pattern-making species: jelutong, mahogany and sugar pine. In terms of density and texture, perhaps jelutong is the most serious rival, but this Southeast Asian cousin of the rubber tree has latex ducts in the wood that limit the size of clear lumber it can produce. Mahogany, still available in large sizes and possessing outstanding stability, has a coarser texture and is denser than basswood. And



finally, sugar pine, only slightly more dense than basswood, has prominent resin canals that can interfere with finishes. As most carvers know, basswood is hard to beat, and being plentiful and inexpensive makes it all the more appealing.

### What the connoisseurs look for

Selecting the very best basswood can be a downright demanding skill. While it's normally important to identify the correct species when choosing most cabinet woods, pedigree is of little consequence when it comes to basswood or its cousin linden. Selecting just the right material rests on other factors relating more to growing conditions and how the wood has been processed.

Most carvers prefer sapwood because it is slightly softer. However, there are some aficionados who extend their demands to an almost cultlike level, believing that only the air-dried sapwood of northern trees is worth dulling a gouge on. Personally, I think the right way to buy basswood carving stock is to look at it and decide if it has precisely the characteristics that you want for a given project. But the aficionados cannot be wholly dismissed: Sapwood is softer, and the wood of the northern trees does seem to be slightly finer and more evenly textured. The controversy over how it should be dried rests on far more complex and subtle issues.

Ordinarily, kiln-dried lumber contains less drying stress and is more stable than air-dried stock, but basswood isn't your typical hardwood in this respect. Although basswood undergoes a high volumetric shrinkage in the drying process, it seems to develop little stress and is quite stable once it has dried. I can cite no laboratory results to confirm it, but I suspect basswood remains stable no matter how it's dried because the cells of its wood tissue have thin walls. Instead of fracturing, the cell walls flex and deform to absorb the drying stress,

Also, the high temperatures of kiln-drying give basswood a slightly darker, sort of dirty gray-tan color. And although color is of little importance if the finished project will be painted, the attitude that whiter is better seems to be the prevailing quality standard. Then again, achieving white wood by air-drying is not as simple as it sounds, either: Basswood is extremely susceptible to sticker stain, and moisture can foster bacterial growth that will result in a rank, sour odor. If you are a carver who intends to cuddle up to a chunk of basswood for days on end, every subtle nuance of its character is important. Even the scent

*Jon Arno, a frequent contributor to Fine Woodworking, profiles various woods of the world.*



**Basswoods make good shade trees.** European lindens (photo above) are often planted as ornamental trees, prized for their full shapes and abundant foliage.

**No knots allowed.** Solid blocks of clear basswood make up the stuff of carvers' dreams. The microscopic view at right reveals why: The pores are small and evenly distributed, lending a smooth texture to the surface of the wood.

