

Basswood, linden, lime-tree, 'pu tee shu'

--what's in a name?

by John Zasada



A clump of basswood that regenerated from stump sprouts.



A "young" clump of basswood stump sprouts.



Two basswood trees that regenerated by seed. Less than 5% of the basswood trees seen in the forest will have grown from seeds. The rest would be from stump sprouts.



"Retting" is a method of removing the inner bark from the outer bark of basswood. It involves tossing the bark in the lake and letting it "swim" for a week or two. The inner bark will loosen and slip easily from the outer bark. Here Author John Zasada retrieves some bark he has been soaking in Lake Jacques.

Tilia americana—to foresters, botanists, and ecologists around the world this scientific name conjures up the picture of a very specific tree (*Tilia* in latin means linden tree so literally translated the scientific name means American linden). But what about basswood, linden, lime and pu tee shu (Chinese for linden)? Common names are often confusing and may be different from one country to another and even from one region of a country to another. Often these common names have no relationship to one another.

The common names for basswood, however, do seem to all have a theme. Here's the story for basswood as nearly as I could determine. All of the names refer to the tree's inner bark. For many centuries, the inner bark has been used in making cordage (rope and twine) to be used in various ways including weaving of bags and cloth. There are interesting historical accounts of the use of basswood bark by Native Americans and poems dating back several millennia to Greek and Roman times that refer to use of linden (*philyra* in Greek/Latin) bark (for example—from a poem by Horace (lived 65 – 8 B.C.) "No Persian cumber, boy, for me; I hate your garlands linden-plaited . . .").

The important feature of the bark is the presence of bast fibers in the inner bark. Bast fibers are relatively long, strong fibers that provide strength to the phloem tissue—the critical tissue that transports energy packed food manufactured during photosynthesis up and down the tree to fuel living cells. Thus the name "bastwood" that evolved to "basswood." Linden, definitely, and lime-tree, not as well documented, also refer to the properties of the inner bark. The reference, however, is not directed to the structure of the bast fibers but to their use. Both words traced back seem to refer to "linen" cloth produced from the bast fibers. (There are many plants with bast fibers—notable in northern Minnesota are spreading dogbane, wood nettle, and swamp milkweed. Perhaps the best known though is flax bast from which very fine linen is made).

An interesting sidelight of the Swedish name for basswood—"linn"—is that the name of one of the most famous botanists, Carl Linnaeus, was derived from "linn." Linnaeus is credited with developing the system for giving scientific names to plants and animals—yup, he's to blame for many of the "tongue-twister" scientific names! The story goes that when his father had to choose a name, he selected Linnaeus because of a favorite tree growing on the family land.

The inner bark is an interesting plant material and a nice twine or braid can be made from it, or it can be used "as is" for a decorative material. If you would



Basswood seedling. The lobing of the cotyledons is totally different than any other hardwood tree seedling in the northwoods.

like to work with the inner bark you are most likely going to have to harvest it yourself as it is not readily available (although you might be able to find some for sale on the internet). But half the fun of working with the material is the process of harvesting the bark and learning more about the structure of the tree.

The first step, of course, is finding the tree—**Be sure you have permission from the landowner before you go in search of a tree!**

Basswood is most commonly found growing with sugar maple on relatively productive sites. The bark is smooth in young trees but very furrowed in old trees. The alternately arranged leaves (maple leaves are opposite) are heart-shaped (but lopsidedly-so), relatively large, and have no major lobes but many fine teeth. Winter buds are a lopsided oval and often reddish in color. Flowers appear in early to mid July and smell great! Bees swarm to the tree tops for the flower nectar. The fruit is very unique—several hard, round seeds dangling below a "parachute". Although hard to find, the small germinants have multiple-lobed seed leaves—unique among trees in the hardwood forest. Basswood trees often occur in clumps of three or more trees that develop because the trees sprout readily from the base. Often the trees in the clump will vary greatly in diameter. I find that younger trees with smooth bark tend to be better as the bark layer is more flexible and easier to handle—but bark from older trees works too.

Found a tree—what's next? If there is a logging operation get permission to remove bark from trees to

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A Lesson in Trees: **American Basswood**

by Dan Gilmore

Several tree species in Minnesota do not readily regenerate from seed. One that we are all familiar with is quaking aspen – a species that commonly regenerates through root suckering. Another species that commonly regenerates vegetatively via stump sprouts in Minnesota is American Basswood (*Tilia Americana*).

Basswood is a component of the northern hardwood forests and is found growing on high-quality sites having a deep, moist, loamy soil. The northern portion of the native range for basswood extends along the Canadian border from the western Maritimes to eastern Manitoba. The eastern portion of the range extends from Maine to the western Carolinas then west through northern Arkansas and southern Missouri extending west to the extreme western portion of the range in the eastern Dakotas. Minnesota is the edge of the range for many tree species, including basswood.

The botanical term for basswood seeds is a "nut-like drupe". They are rarely dispersed more than two tree lengths from the parent tree unless animal help. Good seed years are frequent but long-term studies in Wisconsin have shown that less than 5% of the seeds germinate! Basswood sprouts prolifically and the sprouts can be managed for sawtimber or other products – the soft white wood is a favorite for wood carvers!

Basswood has a thin bark so it is easily damaged by fire but can tolerate late-spring frosts. Stump sprouts are fast-growing and grow out of "deer reach" in one or two years. One doesn't have to go in the forest to find basswood. This beautiful tree is commonly planted along city streets and in parks throughout the Lake States and Northeast.

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be cut—better *before* cutting than after, but you could remove bark from trees cut and skidded to a log deck. If that's not possible, the other options are to remove a single strip of bark from each of several trees or cut a small tree and remove all of the bark from that tree—find a use for the wood as well. For ease of removal and handling, strips of bark 3-4 inches wide seem to work best.

Timing of harvest is critical to make the job relatively easy. The best time is during the active growth period in June and early July. The bark is held to the tree by very weak cells at this time and slips off easily. Although only the innermost layers of bark are used, the entire bark layer is removed from the tree exposing the wood.

Once the bark is in hand, two options are possible. It is possible to remove the inner bark from the outer bark immediately and for some uses this is the best time to make the separation. The second option, called retting, involves tossing the bark in the lake and letting it "swim" for a week or two. During the swim, inner layers loosen and slip easily from the outer bark. The result is long ribbons of inner bark that usually separate into the annual layers that are paper thin. They can be loosely coiled and placed in the sun to dry

before being stored.

I find twine made from the inner bark to be most fun to make and a nice material with which to work. But one often finds narrow strips of the inner bark used as decorative material and to lace and sow baskets together. There are a number of ways to make twine—but the basic goal is to twist two stands together and in doing so creating a stronger material. Twine and rope making machines could likely be used to speed the process.

The northwoods hold many hidden treasures. These plant materials, once an integral part of the lives of inhabitants of these forests, were replaced by modern technology. Rediscovering them can mean better utilization of the forest. But perhaps more importantly, their discovery provides landowners with new opportunities and new ways to appreciate their forest land.

About the author: John Zasada, forest research scientist with the USFS Forest Sciences Lab in Grand Rapids, is a frequent contributor to BetterFORESTS.

You can read text books, you can scan the internet, and you can check out the latest in professional forestry journals if you want to learn about basswood. Or, you can ask Tom Murphy of Menagha.

It's difficult to label Tom as a sawmill owner and operator, or a woodland manager, a timber buyer, a grower of hybrid aspen, or owner of a business providing landscape mulch made from the residue of sawmilling operations. Tom has either done it, is doing it, or has plans to take it on.

But one label you can give him and that is 'admirer' of Minnesota's basswood resource. It grieves Tom that many acres of public land are often harvested for other species and the basswood is 'wasted' by being harvested too young. If left to grow to 60 to 70 years, Tom attests that a very valuable resource is in hand. The high grade product comes from the base area of the tree; the lower grade from the top.

Markets for Minnesota basswood come from as far away as Texas, where the demand stems from the need for good wood-carving stock.

Basswood has those 'good' Minnesota attributes:

- it is not particularly susceptible to insects and diseases;
- if winter cut, its wood retains its white color;
- it enjoys an immense market in venetian blind factories (the basswood is dried in the U.S., shipped to China for construction into blinds, and shipped back for retail sale);
- it retains glue very well and serves to line berry and bushel boxes and baskets;
- it makes beautiful molding (check out the shelves of your local building supply store);
- it grows over many soil types; and
- its flowers are even sought after by bees, with a resultant honey popular among northern apiaries.



Tom Murphy