

Summer 2014

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Upcoming Events:

* Summer Camps
"Earth & Space
Adventures" July 7-11

* Fall Plant Sale
August 23

* Apple Harvest Festival
September 20

Check out the EE Activity Guide for
classes and events offered through
the summer!

[EE Activity Guide](#)

Log on to
www.waukeshacountyparks.com
for more information.

Thanks for the Memories- Shirley Blanchard

Shirley began writing her series "See You On The Trails" in the summer of 1997. Over the past 17 years, Shirley has provide a vast collection of informative works for all of our readers to enjoy. Each Center Line, Shirley researched and compiled information for her special article, as she worked her way along a naturalist's path. Subjects ranging from climate change and prairie wildflowers to the hibernating habits of Wisconsin wildlife found their way onto the Center Lines pages. We will miss Shirley's input and unique perspective on the world just outside our front door. Shirley please enjoy your retirement from being a Center Line contributor and writer.

See you on the Trails!



HEART-WOOD



BARK!

Something we all learned (or should have learned) as kids:
you should not damage the bark of a tree.

You should not pick bark off, or hit it with a stick, or carve in it (though some of us did).

We grew up with a vague idea that bark is somehow special, which I guess pre-supposes that trees are somehow special.

Well, trees ARE special. They eat sunlight and make food, which is then passed up a hundred million food chains that include all kinds of great animals. Trees breathe out oxygen, provide homes for birds, and are great to climb. Trees look beautiful, make the places they grow look beautiful, provide welcome cool shade, and turn wonderful colors in the fall. Trees grow to be so old that they tie time together, connecting us with years, decades, even centuries past (annual ring by annual ring). And trees provide strong, beautiful, resilient wood, for building and carving and furniture and paper, and for campfires.

A tree is a living thing. Its life is a bit different than ours—it doesn't have a brain, and it doesn't walk around—but it does do fascinating things that show it is very much alive. A tree knows what time it is, and when to do what: it responds to changes in the seasons, and knows when to put out leaves, flowers, and seeds, and when to lose its leaves, and when to go to sleep. A tree shows originality and cleverness: it knows how to use sweet aromas and nectar to trick bees into pollinating its flowers, so baby trees (seeds) can be made, and it knows how to use the wind, or birds, or animals to carry its seeds to new places and plant them.



All living things need an outer covering, to hold things in and keep things out. We have skin to do this, and each of our skin takes a special individually recognizable form, the form of our face. Well, trees have bark, which does many of the things our skin does, and the pattern of a tree's bark also gives it a recognizable appearance—a face, if you like. Bark is indeed special.

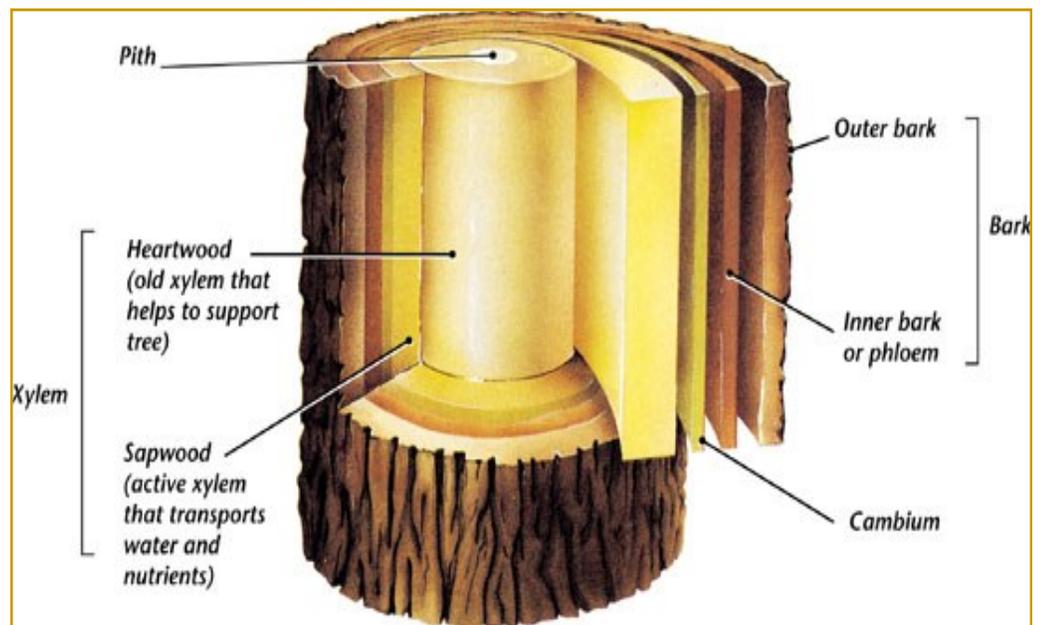
To really appreciate the specialness of bark, we first need a quick review of **How a tree trunk is organized, from inside to outside—**

--The **heartwood** is the oldest wood, located in the tree's center; it provides strength, so the tree can stand up strong and tall.

--The **sapwood** is the newer wood located nearer the tree's outside; it brings water and mineral nutrients up from the roots, which it carries to the branches, shoots, and leaves of the tree.

--The **vascular cambium** is a thin layer of growing, dividing cells, located just to the outside of the newest sapwood. The cambium adds a new ring of sapwood each year, and it rides outward on the accumulating wood as the trunk gets thicker.

--The vascular cambium also produces **phloem** (to the outside); this is the important layer that carries the sugar food (which the leaves have made, by eating sunlight through photosynthesis). The phloem brings the sugar food down from the leaves, and takes it to all the parts of the tree, to be used as fuel for the tree's life activities, or stored for future use.



These important activities of support, transport, and circulation are all vital to the tree's survival—both day-to-day, and for the entire length of the tree's long life. But they could not succeed without an **adaptive, re-generating, protective-yet-porous interface with the outside environment** (in other words, **BARK**).

So...we pick up where we left off with **How a tree trunk is organized**...and everything outside the vascular cambium is part of the **BARK**—

--The **Inner (Living) Bark** includes—

the **phloem—yes, this essential layer that transports the sugar food down from the leaves is part of the living inner bark (and cutting through the phloem cuts off the tree's circulation of food—which is the biggest reason why your mom or teacher told you never to hurt the bark of a tree!).

the **cork skin—a thin green layer that actually can make food, just like a leaf does (if you want to see the cork skin, take a young twig and scratch it with your fingernail—the green layer staring out at you is the cork skin!).

the **cork cambium—a thin layer of growing, dividing cells that produces cork skin to the inside, and protective **cork** to the outside. Some tree species produce only one cork cambium that is active for the entire life of the tree; in other tree species, new cork cambiums arise within the phloem to renew and replenish the protective cork.

—The **Outer (Non-living) Bark** includes—

the **cork—a strong, protective, flexible, water-tight layer which grows thicker and tougher as time passes, but which is also equipped with **lenticels**, special pores that allow oxygen and carbon dioxide to pass into and out of the tree. The exact pattern of cork produced by the cork cambium(s) is specific to each tree species; in fact, this pattern is so specific that it can act as an identifying 'face' for the tree species, enabling us to recognize the tree! (Cork's great special properties make it a valuable commodity; it is harvested from European Cork Oak trees to make corks for wine bottles, flexible linings for shoes and sandals, grips for fishing rods, pin-able surfaces for bulletin boards, acoustic panels for walls, tiles for flooring, and lots of other specialty uses and products!)

the **old bark—pushed farthest to the outside, this is the remnant of old cork and old phloem from past years. It is responsible for the bark's change in appearance as the tree gets older, and it can give a really old tree an ancient appearance. As old bark gets older, and is pushed outward, it is eventually lost from the tree through 'exfoliation'—a process of flaking, breaking, peeling, or powdering off.

Just like a person's face, the face presented by a tree's bark changes as the tree gets older. Any scheme for classifying different kinds and appearances of bark must allow for the fact that a tree's bark changes over time. Having acknowledged this, I classify the appearance of tree bark into 9 categories—

1—**Smooth**—many young trees have smooth bark; some, like American Beech, maintain it into adulthood.

2—**Lenticeled**—lenticel pores are a feature of most bark, but they are not always obvious. Paper Birch, Quaking Aspen, and young Black Cherry show lenticels as a dominant bark pattern.



3—**Cracked**—this is what happens when young trees get older and thicker, a transitional form toward a more adult bark pattern. Maturing Red Maple and Shagbark Hickory show cracking of a previously smooth bark.

4—**Ridged**—this is often the mature result of cracking of the bark surface, an inter-connected pattern of ridges (separated by valleys). Mature White Ash has a very regular pattern of connected small ridges, and mature Black Walnut has a bold diamond-shaped pattern of big ridges.

5—**Knobbed**—this is sort of a sub-set of ridged bark, with ‘tall’ ridges that look knobby. Mature Hackberry is a great example, with knobbed ridges that show cork layers (looking sort of like a ‘mini Grand Canyon’!).



6—**Scaled**—is an overlapping result of bark cracking; a great example is mature Black Cherry, which looks like it’s covered with potato chips, spray-painted black!

7—**Peeled**—the classic example here would be Paper Birch, which peels horizontally in thin sheets. Mature Shagbark Hickory peels vertically, in coarse shaggy curving strips.

8—**Shredded**—this is sort of like peeled, but with smaller strips that come apart. Mature Ironwood is a perfect example.

9—**Weird**—what can I say? Some bark does not fit into any other category, and is just plain strange. Sycamore is an example that comes to mind.

My analogy of tree bark as the ‘face’ of a tree betrays my personal (and un-scientific) feeling about trees. I consider trees as companions on life’s journey, as friends. I admire their beauty, their strength and longevity, their adaptability, their grace under pressure, their service to other life forms and to the environment, their quietly supportive presence. I look at them, and (like any friend) I try to learn to know them, and to come to recognize them. Lots of ways to do this, but for me the most direct and satisfying way is through the face they present to me, their bark.



Larry

Upcoming Events



"Saturday Explorations" programs you don't want to miss!

Seed Germination June 7th 10 -1pm
Life-ways of Trees June 14th 9-11 am
Native Plant Propagation June 21st 9-11am
Wildlife of Early Summer June 28th 9-11 am

Native Pollinators July 12th 9 -11 am Fee: \$5.00
Reptiles of Wisconsin July 19th 1-3 pm
The Life of Insects July 26th 9-11am Fee: \$5.00

Bedrock, Glacier & Soil August 9th 10-11am Fee: 5.00
Mammals In the Summer August 16th 1-2:30 pm



APPLE HARVEST FESTIVAL SEPTEMBER 20TH

Come & enjoy the day with family and friends!

Entrance Fee \$5.00 per car

For more information, go to
www.waukeshacountyparks.com

Retzer's Annual Fall Plant Sale

August 23

9:00am—Noon

Bring you plant and garden
questions—
experts will be on hand to
help.

RETZER'S SIGURDSON BARN - A GLIMPSE INTO IT'S HISTORY

By Dick Bautz and Janet MacIver

On March 20, of this year the Sigurdson Barn burned down. The origin of the fire is still under investigation, but we would like to write a brief history of the barn's origin and use. We would like to tell the story of the barn and how changes in agriculture affected life on the farm, rather than simply listing the past owners.

Long before Retzer Nature Center was founded in

1974 . . . long before the Retzers owned the barn and farmland . . . and even before Sigurdson, an apple grower, purchased the barn and sold apples out of the barn . . . the barn was most likely built for dairy farming. We are not sure of the exact year it was built, but we can examine the archeological evidence and give an estimate. The most important features are the concrete floor layout, the silo, the large hayloft, and the wooden beam construction. This put the barn in the very early conversion to specializing in milk production. Wisconsin opened up for settlement in 1835 and the southern part of the state was quickly occupied. Most farm houses and barns were constructed from logs or rough hand-hewn beams and had dirt floors. By 1848 Wisconsin became a state. The great seal of Waukesha County shows a shock of wheat, a mute testament to the boom and bust of single crop agriculture. Growing wheat quickly depleted the soil's nutrients and as settlers moved westward so did the wheat rust fungus. Wheat was the important cash crop from about 1840 to 1850, but from failure, diversity and specialization Wisconsin grew into a very strong agricultural producer of oats, rye, barley, cranberries, cherries, apples, strawberries, a wide variety of vegetables, and tobacco.

In the beginning of the 1870s, farming in Wisconsin began to specialize in dairy products which dramatically changed life on the farm. With the help of dairy research at the University of Wisconsin-Madison College of Agriculture, dairy farming in Wisconsin began to take the lead in cheese and butter production. The quick growth of the dairy industry brought a higher standard of living and a more profitable income to Wisconsin dairy farmers. At the turn of the 20th century some of the most progressive dairy farmers did so well that they had the first generators and electric lights on the farm well before most small towns had electricity. The Wisconsin environment, with its vast grasslands and cow-friendly weather (dairy cows do not do well in hot climates), was great for the milk business. Dairy products could be produced year round. The new internal combustion engine and the milk truck allowed a quick trip to the market. Milk trucks were cooled by ice cut from lakes in winter.

By modern standards, the Sigurdson barn would be considered a small barn. The inside measurements of the lower level were 28 ft. wide by 42 ft. long. The size and the layout of the concrete floor had both level and sloping areas, and suggests to us that it was originally set up with wooden stanchions to restrain the cows for milking. Later barn floors had iron stanchions and gutters in the floor. Silos for grain date back thousands of years, to the earliest days of agriculture. But silos built for silage revolutionized agriculture, and helped advance the dairy industry. The Sigurdson barn's first silo probably was made of wood and later upgraded to concrete.



The thing to remember is that silage was the brilliant new idea in feeding dairy cattle. It was first used in France in the mid 1890's. Silos and silage quickly caught on in England, and by the late 1890's they were being used in America. In all cases, this greatly benefited the newly emerging dairy industry, and was a real step up for farmers. Before the mid 1890's farmers usually kept only a few cows through the winter, simply because it was difficult to store enough hay to get a large herd through the winter. Cows usually went dry, that is, stopped producing milk in the winter. It was simply not economical to keep a large herd of milk cows all winter long, so many cows were sold in the fall for meat. Silage made it economical to feed the cows throughout the winter, and the surplus milk became a new source of revenue for farmers. Silage can be made from many things, but it usually includes chopped-up and fermented alfalfa, clover and oats. Silage was made very much like homemade sauerkraut, but on a much larger scale. Silage has a very long storage life, and it will stay fresh and nutritious until the next spring. The tall cylindrical silos we commonly see today were invented around the turn of the 20th century by an American agricultural scientist Franklin Hiram King. To supplement the feed, oats and hay (hay is dried and usually baled green vegetation, grass, clover, alfalfa, etc.) were also provided for the cows. The straw (straw is the dry yellow stems of wheat or oats) from the oats was used for bedding., a barn's gambrel roof allowed for ample space in the loft to store both the hay and straw.

The dairy industry grew rapidly, and by the late 1920's the Sigurdson barn may have had difficulties competing with the newer farms with larger barns and larger silos. At best, the barn could house fewer than 20 cows. The Great Depression of 1929 sealed the fate of many farmers large and small. The decision to change from a dairy to an apple orchard was possibly the best use of a now too small barn. An orchardist named Mr. Sigurdson bought the barn, managed an apple orchard next to the barn and sold apples. Some of you probably remember stopping and buying apples at the barn back in the 1950's and 1960's. In trying to estimate when the barn was built, we spoke of the floor layout, the silo and the roof design and large hayloft. The timber frame construction also helps us date the barn. Even after the fire the huge wooden beams, now black and looking like charcoal, are still impressive. Two of the beams fell behind the barn and we were able to pull a wooden peg out of the joint between them. The beams were held together by a mortis and tendon joint. This is also helpful in estimating the time of the barn's construction. The beams were pine and were sawn, not hand-hewn. The mortis and tendon joints were cut by hand, and a pair of white oak pegs, one inch in diameter and seven inches long, held them in place. In fact, it was the oak pegs in all the wood joints that held the whole barn together.

There is a photo of one of the pegs in Figure 1. The peg is straight grained white oak, and was hand planed to be octagonal in cross section. During construction, the one inch holes were cut with a bit and brace. The holes through the out-sides of the mortis were cut first; then the tendon was set in place and marked and pulled back out of the mortise. The holes through the tendon were drilled slightly toward the mortis by about 3/16 of an inch. Now when the joint was reassembled and the pegs pounded through, the two beams were drawn together very tight. In the photo, you can see the slight bend that still remains in the peg.



Figure 1

The best estimate of when the barn was constructed is between the late 1880's and before 1910. The Sigurdson barn was not part of the Retzer farm. At the Retzer Nature Center there is an old photo of the Retzer farmhouse and barn, but both are gone. In 1980, the Sigurdson barn was acquired by the Waukesha County Parks and subsequently used as storage by Retzer Nature Center. The lower level of the barn was used for cold storage of prairie seed and the over-wintering of plants. The upper level and the loft were used to store Apple Fest supplies, machinery, compost bins, a canoe, and other miscellaneous supplies.



Figure 2 shows the entrance door to the lower level and a foundation wall stone with a large fossil impression.

Figure 2

Figure 3 is a close up of the unique limestone fossil.

The entrance door and the whole Sigurdson barn was painted red like most barns. "Red is (or, perhaps was) a popular color for barns due not to its color shade but for its usefulness. Many years ago, choices for paints, sealers and other building materials did not exist. Farmers had to be resourceful in finding or making paint that would protect and seal the wood on their barns. Hundreds



Figure 3

of years ago, many farmers would seal their barns with linseed oil, which is an orange-colored oil derived from the seeds of the flax plant. To this oil, they would add a variety of things, most often milk and lime, but also ferrous oxide, or rust. Rust was plentiful on farms and because it killed fungi and mosses that might grow on barns, was very effective as a sealant. It turned the mixture red in color. When paint became more available, many people chose red paint for their barns in honor of tradition. (www.farmersalmanac.com)

After the fire, we were able to save most of the over wintering plants, but the stone and the oak peg were the only things of the original barn that were saved.

ON BOARD WITH THE FRIENDS

With the summer flowers starting to pop, the tadpoles developing their legs and getting ready to hop, and your children running up and down the hills non-stop, NOW is a good time to come to Retzer with your camera and get some award winning pictures! The Friends of Retzer Nature Center will again be having a Photo Contest on Sunday, Nov. 2, 2014



This contest is open to the public. However, the pictures must be taken at Retzer Nature Center or on a Friends of Retzer sponsored trip. We also have a category for children, so encourage them to take some pictures too. The pictures may be black and white or color, of wildlife, flowers, people and at events. More information and entry brochures will be in a future Centerline, on line at the Friends website, and available for pick-up at the Nature Center in early fall.



The Friends of Retzer Nature Center are raffling off two signed, framed and numbered prints, one by Owen Gromme and one by Rob Stein. They can be viewed near the front desk of Retzer Nature Center. Raffle tickets can be purchase there also. The price of a ticket is \$5.00. The sale of tickets will be limited to 200 so your odds of winning one of these lovely prints are better than average. The drawing will be held at the close of Apple Harvest Fest on Sept. 20th. The winners need not be in attendance. The prints were donated to the Friends of Retzer so all the proceeds will benefit Retzer Nature Center.



Celebrating Retzer Nature Center's 40th Anniversary!

Retzer Nature Center was John and Florence Retzer's retirement home. John purchased the original 90 acres from the Federal Land Bank in 1938. The Retzer's immediately began restoring the degraded land with over 26,000 trees, shrubs, and flowers, many obtained from the Wisconsin Conservation Department. These plantings can be enjoyed today. In 1973, Florence Horn Retzer bequeathed her property to Waukesha County for park purposes. Her vision was "to conserve the scenery, natural life and wildlife, leaving the land unimpaired for the enjoyment of future generations."

Guided by Mrs. Retzer's wishes, the Waukesha County Park System began developing a nature center in 1974. Significant land acquisitions in 1980 and 1984 expanded the site to 335 acres. Additional land acquisition in 2001 brought the nature center to its current 403 acres. The Nature Center focuses on environmental education, natural land management, community restoration, and wildlife habitat improvement. Today restored prairies, a colorful butterfly and rain garden, and an oak opening demonstration area greet visitors and compliment the Retzer's original homestead. The Retzer Environmental Learning Center and Charles Z. Horwitz Planetarium addition opened in May of 2005.



Original Farm House



View of the future Nature Center building site



Nature Center—1974



Nature Center—1986



Nature Center—2005 to present





RETZER NATURE CENTER

WAUKESHA COUNTY PARKS & LAND USE

S14W28167 MADISON STREET

WAUKESHA, WI 53188

Return Service Requested

Friends of Retzer Nature Center

The Friends of Retzer Nature Center is a registered, 501 (c)3, organization dedicated to encouraging, perpetuating, and promoting the work of conservation and natural resource education.

The organization seeks the involvement of the community in the form of financial and volunteer support to work toward the continued growth and improvement of Retzer Nature Center. If you would like to become a member or view some of our projects and activities, please visit our web site at <http://FriendsOfRetzer.org>.