

Winter Tree Identification

Presented by:
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This Winter Tree I.D. Volunteer Enrichment took place at the Litzsinger Road Ecology Center on 02/17/16. This presentation was followed by a winter tree walk on the property to practice using the tools discussed. The walk included tree examples featuring key identifying characteristics discussed in the presentation, examples of younger and older trees of the same species to compare bark changes, and gave people the opportunity to practice using dichotomous keys.

Overview

- First clue: leaves or lack of, deciduous vs. coniferous
 - 3 native conifers of MO = bald cypress, shortleaf pine, & eastern red cedar
- Bark: young and mature bark
- Buds
- Twigs
- Surroundings – along stream bank, moist sites, understory/edge of woods

The ability to identify trees in the winter is a valuable skill that will strengthen your tree identification ventures throughout the year. Although we often rely on leaves to indicate the tree species, there are several other clues available to us in the winter, if only we know what to look for! Remember to look up, down, and all around, and use all of your senses for these clues.

One of your first clues is to determine if the tree is deciduous or coniferous. Does the tree still have green leaves (needles) or have they all dropped? There are only 3 native conifers of Missouri; the bald cypress (deciduous conifer), shortleaf pine, and eastern red cedar. However, the bald cypress loses its leaves in the winter. Because deciduous trees are more common in Missouri, this is one quick way to eliminate some possibilities.

You may notice that some trees, particularly oaks and beeches, tend to hang on to some of their leaves in the winter. “Botanists call this retention of dead plant matter marcescence.” Despite being brown and dead, you can usually still see the general shape of the leaf.

Recognizing the bark of different species can become the most useful tool in your identification arsenal. Practice observing older and younger trees of the same species. How does the bark look similar or different in comparison? The bark on younger trees tends to look more similar, making identifying them based on bark more of a challenge. Older trees usually develop the more characteristic bark features that you can rely on.

Bud features are another important factor to consider, even in the winter. The color and texture of the bud scales, presence or absence of terminal buds, and size and shape of the buds are unique to each tree.

Check to see if the branching is opposite or alternate. – More info on later slides

Also, try to take a step back and make note of your surroundings. What type of environment is this tree in? Is it along a stream bank? Does the site have generally moist soil? Is it an understory tree or did you find it on the edge of the woods?

Bark

- Descriptions for bark patterns and features
- Outer bark – Visual and Touch
- Inner bark – Color and Smell
- Associations

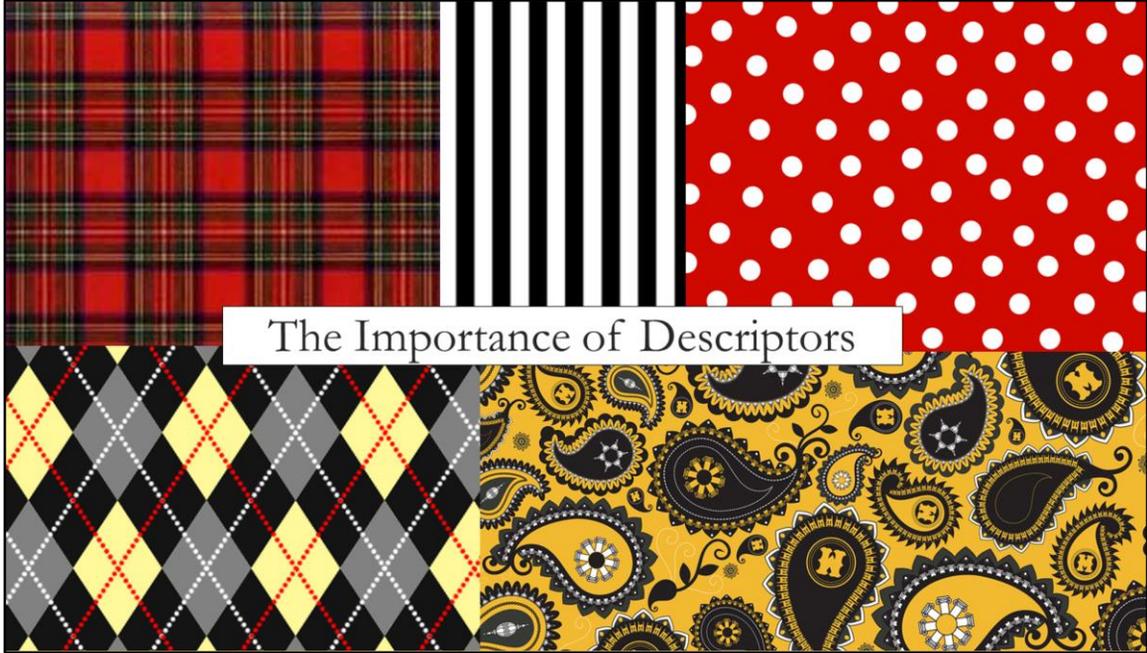
Recognizing different types of bark is one of the key ways to identify trees, especially for winter identification. Bark is one of the most noticeable features when approaching a tree and will help you think about the species, age, and even condition of the tree.

Many field guides and dichotomous keys have descriptive terms for bark patterns and features. Understanding what these terms are referring to will help you to more easily recognize and remember bark patterns as you encounter them.

The outer bark can give you some quick clues visually and by touch. Getting close enough to touch and observe the bark may reveal some more distinct features to you. Is the bark spongy? Is it flaky? Is it smooth?

Peeling or scraping some of bark to reveal the inner bark can reveal distinct bark smells and/or colors.

Associating the bark with funny descriptions or stories that are meaningful to you is also important. Cherry trees having “burnt potato chip” bark may not be an official descriptive term used in field guides, but if a description makes sense to you, it will aid you in recognition and practice.



The Importance of Descriptors

Knowing the names of patterns and features of bark is just like knowing the names of fabric patterns that are familiar to us.

Plaid, stripes, polka dots, argyle, paisley – these are fairly commonplace terms. But what if you didn't know that argyle was called argyle? How would you describe it? The ability to employ that term from your vocabulary at any time is much easier than say, "that diamondy, stripey, pattern". Knowing that "argyle" is "argyle" makes it easier to recognize it different places; on socks, sweaters, etc. Knowing what ridges are on a tree will allow you to quickly zone in on them, recognize them on different trees, and delve deeper into observations – "I see ridges, now are they flat? Let's look and touch to see if they are corky, scaly, or smooth. Do they form a diamond pattern?"

Committing bark vocabulary to memory will result in a big payoff as you're familiarizing yourself with bark.

Smooth

American beech
(*Fagus grandifolia*)



The American beech, *Fagus grandifolia*, is an excellent example of a tree with smooth bark. The color and texture of the trunk resembles that of an elephant's leg.

Scaly

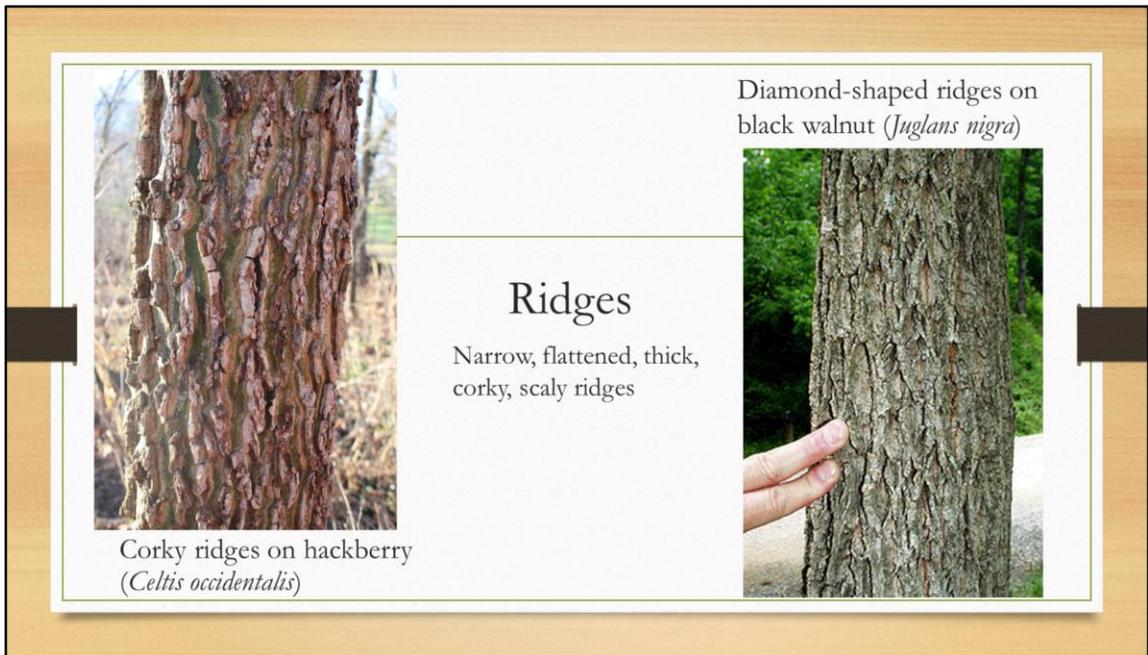


Black cherry (*Prunus serotina*)
association = potato chips

Scaly ridges on Kentucky
coffeedtree (*Gymnocladus dioica*)



The black cherry, *Prunus serotina*, is an example of scaly bark. It is often associated with looking like burnt potato chips. Although the cherry scales are small and chip-like, scales can come in different forms. For example, the ridges on the Kentucky coffeedtree could be described as scaly. From a side view, they also look like they're flaking off from one edge of the ridge.



The elevated part of the bark would be the ridges. They can vary from being very thick or thin, smooth, flat, wide, and short or long in length.

The corky ridges on hackberries, *Celtis occidentalis*, is one of the most fascinating examples of ridges here at Litzsinger. The layers of bark that stack to create the ridges are best appreciated from a side view. One volunteer said that it reminds them of the Grand Canyon. Another said that they explain to kids that it reminds them of the Litzsinger landscape, with the ridges being the forested woods that are connected, curve, and then dip into the furrows, which wind like the stream.

Another distinct feature of some tree bark is when the ridges form a diamond-shaped pattern, such as on the black walnut, *Juglans nigra*. Some people associate this pattern with ski slopes.

Furrowed

- Long, deep grooves
- Deep or shallow furrows

Deep furrows on cottonwood
(*Populus deltoides*)



The furrows are the grooves in between the ridges. Some ridges form a V-shaped furrow and other furrows can be flat. The deep, long furrows and thick ridges of the cottonwood, *Populus deltoides*, gives it a very distinct bark that can be seen from afar.



Shaggy

Shellbark hickory (*Carya laciniosa*)

Shaggy bark has a peeling appearance to it, which varies between trees. For example, the shellbark hickory, *Carya laciniosa*, has a very shredded appearance with long shaggy pieces of bark.

Texture of Bark

Is it smooth? Corky? Flaky?



Paw Paw

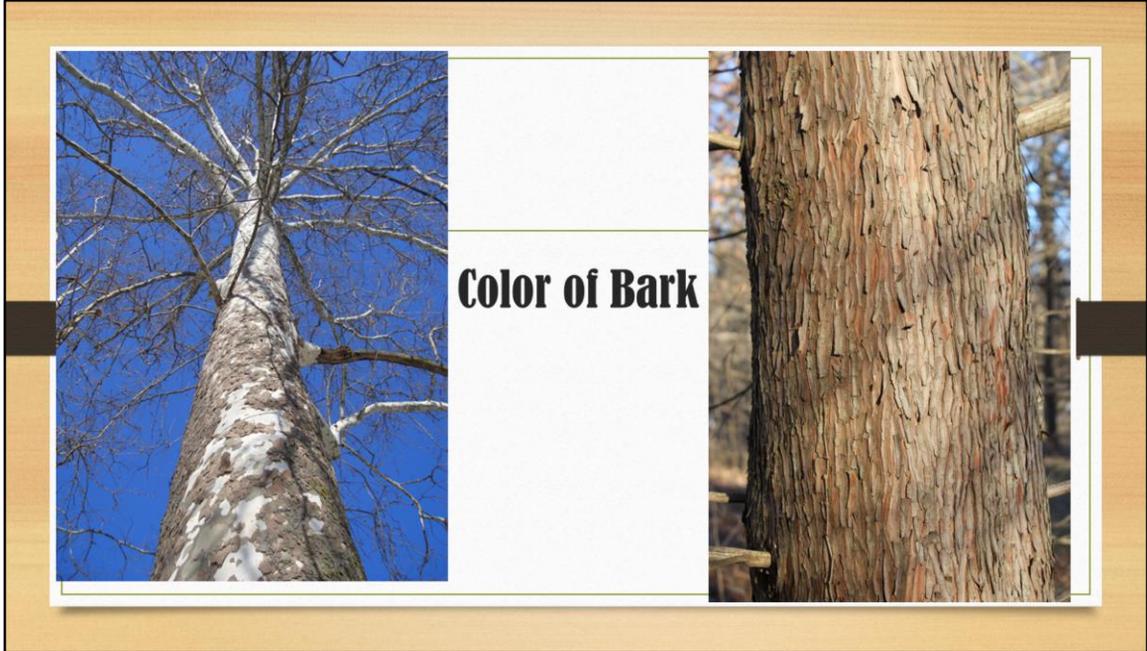


Hackberry



River birch

When identifying trees, challenge yourself to put a somewhat solid descriptive term to what you're seeing. Field guides will often include a section that defines botanical terms to help you learn and differentiate between them.



Left: The sycamore, *Platanus occidentalis*, is a beautiful example of a tree with distinct bark color. This tree is known for its camouflage appearance, created as the brown bark flakes off to reveal the white bark beneath.

Right: The bald cypress, *Taxodium distichum*, is another beautiful example of the significance of the color of the inner tree bark. This species has reddish-orange bark that gives a warm appearance.

Association



Persimmon tree (*Diospyros virginiana*)



Alligator hide

In your tree identification journey, feel free to make associations with features in a way that is meaningful to you. Some people associate the bark of the persimmon, *Diospyros virginiana*, with the pattern of alligator hide. One staff member says it reminds her of burnt charcoal. Use whatever works for you!

Possum in the Paw-Paw:

Association can also be a silly story or play on words. For example, one of our beloved volunteers, Ray, shares a tale about pawpaw trees. He claims that it's good practice to hang a dead opossum in a paw-paw in order to encourage pollination by attracting flies to the carcass. Does this work? Who's to say...But will I recognize that tree as the "dead opossum" tree every time I see it now? You bet!

Branching Pattern

MAD Horse Bucking

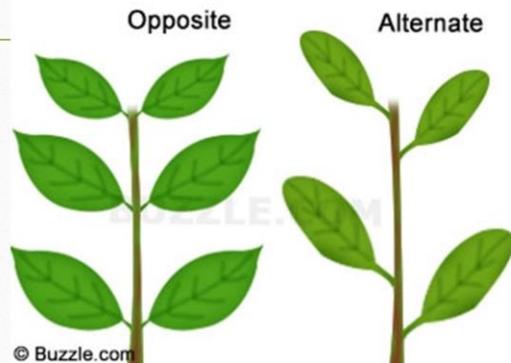
Maples

Ashes

Dogwoods

Horse chestnuts

Buckeyes



Look at the leaf scars to determine if they are across from each other (opposite) or staggering (alternate) on the branch. Looking at the branches from afar could be misleading because if the branch on one side fell off and not the other, it could appear to be alternate when really it's opposite.

If you find the branches to be opposite, you can then employ the mnemonic device, “**MAD Horse Bucking**”. Trees with opposite branching include:

Maples (Maple family = Aceraceae and Genus = Acer) ex: Silver maple, Red maple

Ashes (Olive family = Oleaceae and Genus = Fraxinus) ex: Green ash, White ash

Dogwoods (Dogwood family = Cornaceae and Genus = Cornus) ex: Flowering dogwood, Alternate-leaf dogwood

Horse chestnuts (Horse-chestnut family = Hippocastanaceae and Genus = Aesculus) ex: Horse chestnut

Buckeyes (also in the Horse-chestnut family = Hippocastanaceae and Genus = Aesculus) ex: Ohio buckeye and Red buckeye

Twigs

Terminal bud, in this case pubescent (fuzzy).

Leaf scar, where the leaf was attached.

Vascular bundle scars, where the xylem entered the leaf and phloem entered the twig.

Lateral bud

Pubescence might appear on the bud or on the twig, in this case it appears on both.

Leaf arrangement, in this case the leaves do not appear opposite each other but alternate on the twig.

Pith, in this case chambered (divided).



Understanding twig terminology is particularly important when using dichotomous keys. Some keys will provide a description and diagram of the terms in the beginning, but it's still a good idea to familiarize yourself. Remember – you don't have to memorize specific measurements of these features, just know what they are so that you can effectively key it out!

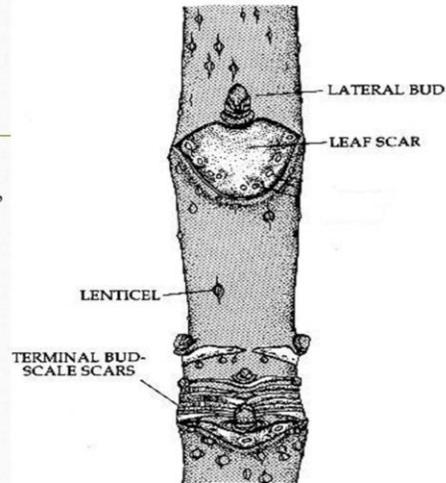
Buds

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- “Condensed” shoots
 - Terminal bud present?
 - Contain next years stems, leaves, and flowers
 - Length
 - Bud scales protect inner leaves
 - # of bud scales
 - Shape
 - Color

Taking a closer look at buds in the winter is a great way to really appreciate and observe the life cycle of trees. It’s interesting to watch buds swell and ponder over when the buds of different species open over the season.

Terminal Buds

- Terminal bud allows the stem to grow longer, only one on a twig
 - When terminal bud scale scars fall off they leave scars on the twig
 - Allows you to see last year's growth

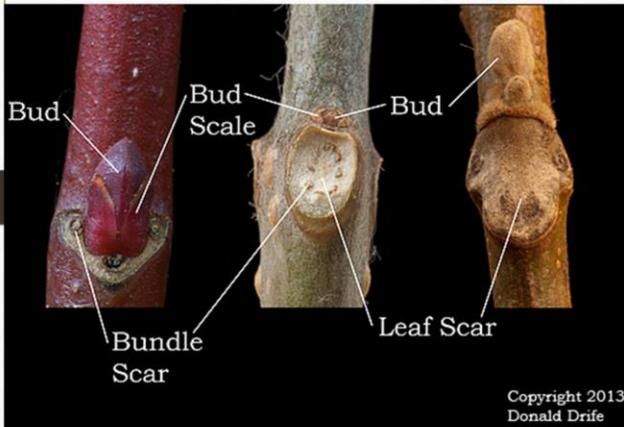


Not all trees have true terminal buds, which makes it another identifying characteristic. Sometimes the exact terminal bud is difficult to distinguish. It is still helpful to observe the end of the twig for the presence or absence of the terminal bud or for a cluster of buds, which would indicate that it could possibly be an oak tree.

The terminal bud is what allows the stem to grow longer each year. The size of the terminal bud in relation to its lateral buds, the shape of it, and the appearance of its bud scales (number, color, texture) are unique to each species.

When the bud opens, the bud scales die back and create scale scars. These scars create a small grouping of rings around the twig. These offer a great opportunity to show students last years' growth on a twig, which would be from the twig tip to the nearest bud scale scarring. Growth will be different year to year and even from twig to twig. See how many years back you can find on the twig!

Lateral Buds



- Lateral buds allows side branches to grow, several on a twig
 - Sit above leaf scar

The lateral buds on twigs are also unique to different species because of their size, texture, and color. They are always found sitting above the leaf scar, so in the growing season, you can find them in the axis of where the leaf stem meets the branch.

Leaf Scars

- Shape and color of leaf scars
- # of vascular bundles



Black walnut and butternut have a "monkeyface" leaf scar

Leaf scars are created when a tree drops its leaves. The shape of the scar that remains is characteristic to different tree species. The number of bundle scars that are left in the leaf scar is also an identifying feature. The vascular bundles that created the bundle scars was where the leaf received its nutrients and water in the growing season.

For example, black walnut and butternut trees are associated with having "monkeyface" leaf scars.

Location

- Litzsinger – bottomland hardwood forest
- Along streams
- Along forest edges, understory

In addition to using clues on the tree itself, use clues in the surrounding area! Is this tree along a streambank, in a dry upland area, or part of the understory on a forest edge? Certain tree species can often be found grouped together in areas because they have similar habitat preferences. For example, if you see sycamores, you might expect to come across some cottonwoods and river birches too because it's probably fairly moist soil. Learning these preferences will help you to know what to anticipate when exploring different habitats.

Since Litzsinger supports a bottomland hardwood forest that experiences periodic flooding, it makes sense that we find many moisture-loving trees here.

Applying Tree I.D. to students

- Talk about why trees lose their leaves in the winter – deciduous vs. conifer
- Make it an investigation
- Search for acorns, gumballs, buckeyes
- Talk about seed distribution and pollination

Winter tree identification can inspire wonder and curiosity in students of all ages. Observing buds, thinking about life cycles and energy distribution, and taking the time to get to know bark is an uplifting reminder that we are all lifelong learners.

Many of our volunteers already use these suggested activities and are sure to use their boundless creativity to expand on them!

Resources

- <http://www.nature.org/ourinitiatives/regions/northamerica/unitedstates/indiana/journeywithnature/winter-tree-identification.xml>
- <http://dendro.cnre.vt.edu/dendrology/syllabus/twigkey/location.htm>
- <http://grandpacliff.com/Trees/Twigs.htm>
- <https://web.extension.illinois.edu/fiprw/downloads/56616.pdf>
- <http://www.backyardnature.net/treebark.htm>
- <http://www.nycgovparks.org/news/daily-plant?id=19242>
- <http://dendro.cnre.vt.edu/forsite/idbark.htm>
- <http://www.pawpaw.kysu.edu/PDF/PomperAPSfin2.pdf>

The Virginia Tech Dendrology database is a staff favorite, offering great species factsheets, and is accessible online.