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Forestry and Natural Resources
Know your Trees Series

Indiana's Native Magnolias

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Introduction

When most Midwesterners think of a magnolia, images of the grand, evergreen southern magnolia *(Magnolia grandiflora)* (Figure 1) usually come to mind. Even those familiar with magnolias tend to think of them as occurring only in the South, where a more moderate climate prevails. Seven species do indeed thrive, especially in the southern Appalachian Mountains. But how many Hoosiers know that there are two native species

Figure 1. Southern magnolia

found in Indiana? Very few, I suspect. No native magnolias occur further west than eastern Texas, so we "easterners" are uniquely blessed with the presence of these beautiful flowering trees.

Indiana's most "abundant" species, cucumber magnolia *(Magnolia acuminata)* (Figure 2), occurs naturally in the southern part of the state. Cucumber magnolia's specific name, *acuminata*, refers to its acute leaf tip. It is the most cold hardy of all North American magnolias, and

Figure 2. Cucumber magnolia

when planted will grow well throughout Indiana. In Charles Deam's *Trees of Indiana*, the author reports "it doubtless occurred in all or nearly all of the counties in southern Indiana south of a line drawn from Franklin to Knox counties." It was mainly found as a scattered, woodland tree and considered very local. Today, it is known to occur in only three small native populations and is listed as State Endangered by the Division of Nature Preserves within Indiana's Department of Natural Resources.

As the common name suggests, the immature fruits are green and resemble a cucumber (Figure 3). Pioneers added the seeds to whisky to make bitters, a supposed remedy for many ailments. The best place to view this magnolia is in the Indian Bitters Nature Preserve in Jackson-Washington State Forest. The state Big Tree champion is a planted yard specimen in Greensburg, Indiana. It stands 79 feet tall with a trunk diameter of nearly three feet.

Figure 3. Immature cucumber magnolia fruit

Indiana's second native species, umbrella magnolia *(Magnolia tripetala)* (Figure 4), has been found in one wooded ravine in Crawford County and is listed as State Endangered as well. It was not until 1945 that these few trees were distinguished from cucumber magnolias by Frank McFarland. Pioneers from that area always had mistaken it for cucumber magnolia.

Figure 4. Unbrella magnolia

Umbrella magnolia is a much smaller species than cucumber magnolia, especially in Indiana, and it struggles to attain a diameter of 6 inches. Open grown trees are often bushy. The common name refers to the fact that all of its long leaves are clustered at the end of the limbs, giving an umbrella-like appearance. Its specific name *tripetala* refers to the whorls of three petals and sepals in its flowers. Like all magnolias, this species prefers cool, wooded ravines with deep, rich, moist soils. It is the most cold hardy of the "big-leaved" magnolias, but it is sensitive to wind and ice. Currently, there is no Big Tree champion for Indiana.

Identification

Leaves: Leaves of both species are deciduous. Cucumber magnolia has smaller leaves (Figure 5) than umbrella, generally six to seven inches long, but they can reach

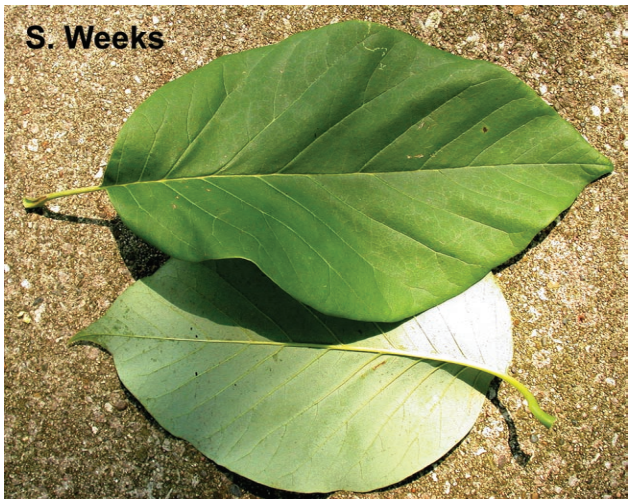

Figure 5. Cucumber magnolia leaves

a maximum length of ten inches. They are uniformly broad and somewhat egg-shaped with an entire margin. The leaf tip is abruptly pointed (acute), while the base is flattened or acute. Leaves are dull green and smooth above, lightly hairy and a bit more pale beneath.

Umbrella magnolia is considered one of the "big-leaved" magnolias native to the eastern United States. Its leaves (Figure 6) are up to 20 inches long with a shape similar to an airplane propeller blade (obovate-lanceolate). The leaf

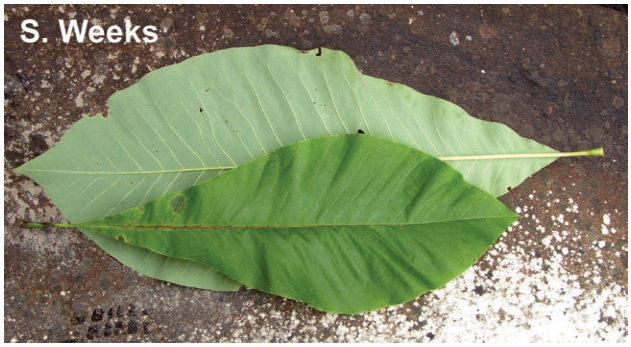

Figure 6. Umbrella magnolia leaves

tip is bluntly acute and the V-shaped base narrows to the petiole. They are light green and smooth above, lightly hairy and pale beneath. One of the

first things to look for when identifying any magnolia is the shape of the leaf base. Several species that occur together in the southern Appalachian Mountains have lobed leaf bases (Figure 7 – bigleaf magnolia *(M. macrophylla))*, a characteristic that easily separates them from umbrella and cucumber magnolias.

Figure 7. Bigleaf magnolia leaf base

Buds: Buds of the two species are quite different. Cucumber magnolia buds (Figure 8) are one inch long and somewhat elongated,

Figure 8. Cucumber magnolia buds

Figure 9. Umbrella magnolia buds

especially when compared to those of the many introduced species. They are pale gray-green and densely hairy (pubescent). There are no visible scales.

Umbrella magnolia buds (Figure 9) are elongate and over one inch long. They are purple green, hairless (glabrous) and often covered with a whitish bloom (glaucous). They have several visible scales.

Twigs: All members of the Magnolia family share a common and rather unusual characteristic – a stipule scar that encircles the twig at each node. Stipules are leaf-like bracts that emerge in the spring with the leaves. Magnolia stipules are attached to the petiole of each leaf (Figure 10) and the twig. They can drop anytime during the growing season, and when they do, they leave behind a permanent stipule scar (Figure 11). This same scar can be seen on the twigs of tuliptree, another member of the family.

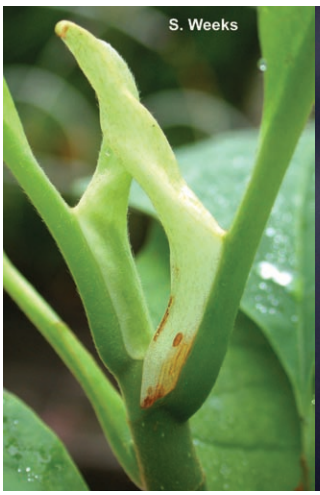

Figure 10. Magnolia stipules

Figure 11. Stipule scar

Flowers: Flowers are the main reason people plant magnolias. From an ornamental standpoint, they can hardly be beat, and many domestic varieties on the market are selected for that key attraction. In Indiana, our native magnolias flower in early May after the leaves have developed. All magnolia flowers are terminal, and sit upright at the end of branches. Cucumber magnolia has relatively small flowers

Figure 12. Cucumber magnolia flower

Figure 13. Umbrella magnolia flower

(Figure 12), only an inch wide with petals that are two to three inches long. They have six greenish petals that are often overlooked, as they blend in well with the leaves. They are very aromatic and appear bluish green from a distance.

Umbrella magnolia, unfortunately, is one of the few magnolias with malodorous (described as dirty gym socks by one author!) flowers. But never-the-less, they are showy and large, up to 10 inches across and creamy-white (Figure 13). They have six to nine petals and three reflexed sepals, all seeming to be in whorls of three. The filaments are purple. Magnolia flowers are rather short-lived – within a week they begin to fade, so one must enjoy them while they are around.

Fruit: Magnolias produce fruit that is technically known as an aggregate of follicles.

Figure 14. Tulip-tree fruit

That just means that each fruiting head is made up of many ovaries combined into one. It resembles a cone (pine cone shape). Indiana's state tree, the tulip-tree *(Liriodendron tulipifera)*, is in the same family as the magnolias (Magnoliaceae), and if one looks carefully at its fruit (Figure 14), the resemblance in shape may be seen. Our native magnolia fruits ripen in late summer.

Cucumber magnolia fruits (Figure 15) are the same size as its flower petals, two to three inches long. They sit upright on the twigs, just like the flowers. The ripe fruit is rosy-red and glabrous, with many bright red seeds, that upon emerging from the fruit, are suspended by a short, thin thread (funiculus). The fruit often looks malformed.

Figure 15. Cucumber magnolia fruits

Figure 16. Umbrella magnolia fruits

Umbrella magnolia fruit (Figure 16) is about four inches long, rosy-red and glabrous, with bright red seeds. It looks very similar to cucumber magnolia, but tends to be more uniformly "plump."

Bark: Cucumber magnolia is the only native North American magnolia that does not have smooth, gray bark (Figure 17). It is gray-brown with narrow ridges divided by long, vertical fissures. It is similar to the bark of white ash *(Fraxinus americana)*, but is thinner with no interlacing furrows. The tree often appears somewhat brown because pieces of the outer bark tend to sluff, exposing the darker inner bark.

Umbrella magnolia, on the other hand, has typical magnolia bark (Figure 18). It is ash-gray, smooth and thin. Its bark is similar to that of American beech *(Fagus grandifolia)* and pawpaw *(Asimina triloba)*.

Figure 17. Cucumber magnolia bark

Figure 18. Umbrella magnolia bark

Form: Cucumber magnolia is certainly the largest native magnolia in the Midwest. It can grow to a height of 80 feet with a trunk diameter of four feet. Open grown trees (Figure 19) can be large and impressive, with low, sweeping branches that often almost touch the ground. The crown is large and pyramidal-shaped. Forest-grown trees have a similar growth form to its cousin, the tuliptree. They are tall, straight and limbless for many feet.

Figure 19. Open grown cucumber magnolia

Umbrella magnolia is a small tree, only attaining heights of 30 feet. A large tree in Indiana might have a trunk diameter of six inches and a height of 20 feet. It has an irregular, wide spreading, open crown and will grow bushy in a yard setting. Forest grown trees could be described as "spindly."

Range Maps

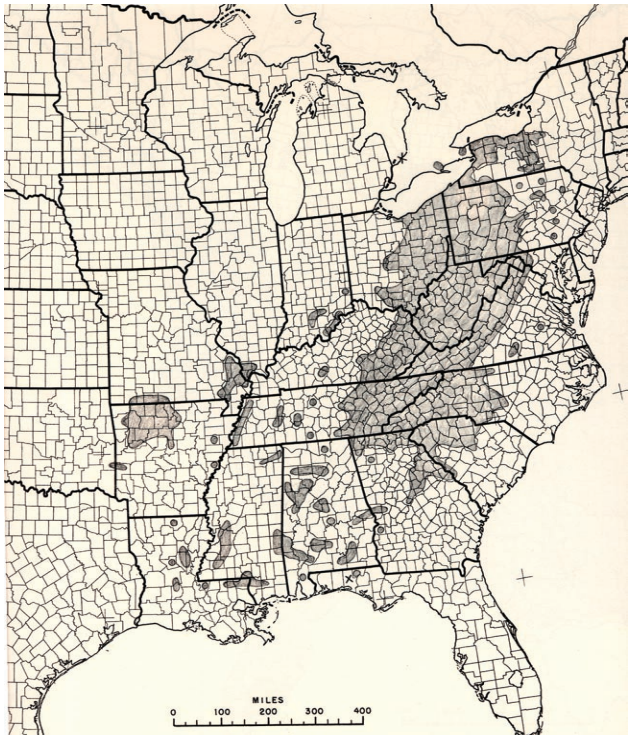

Figure 20. Natural range of cucumber magnolia

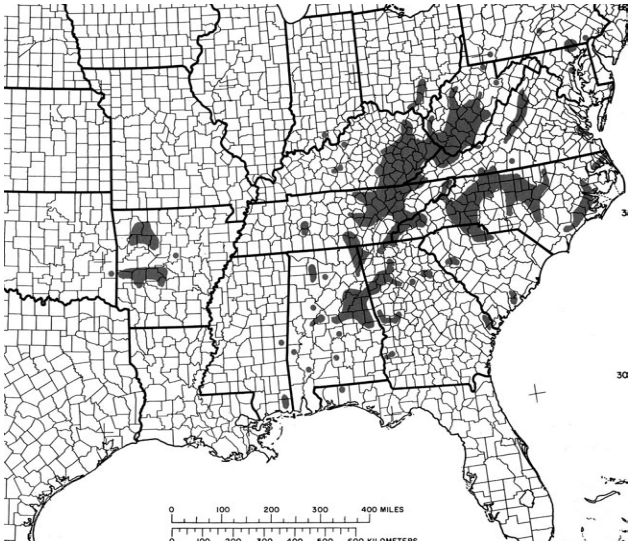

Figure 21. Natural range of umbrella magnolia

Similar Species

In Indiana, the tree most often mistaken for a magnolia is the very common pawpaw. Pawpaw's leaves (Figure 22) are nearly identical to those of umbrella magnolia. One main feature, however, gives the pawpaw away: crush a leaf if in doubt – the pawpaw leaf will give

Figure 22. Pawpaw's leaves and bud

off an odor that has been described as similar to green peppers and diesel fuel. A close look at the pawpaw bud also distinguishes it. It is small, chocolate-brown, and shaped like a feather. Twigs have no stipular scars. The bark and form of pawpaw is very much like that of umbrella magnolia.

Other magnolia species and horticultural varieties not native to the United States are commonly sold in nurseries. It is extremely rare to find a nursery selling natives, unless they specialize in them. Several magnolias commonly offered in midwestern nurseries include Star magnolia *(Magnolia stellata)*, saucer magnolia *(Magnolia x soulangiana)* (Figure 23), and *Magnolia*

Figure 23. Saucer magnolia

lilliflora. They all have very similar characteristics, making identification difficult unless they are encountered when flowering. Most have dark green, rather thick leaves (Figure 24) that are about six inches long, and densely hairy buds that are about one inch in

Figure 24. Introduced magnolia species

length. Flowers of some species are more boldly colored than our natives.

Other species native to the eastern United States may be encountered when traveling in Indiana. In the extreme southern part of the state, southern magnolia has been planted occasionally and tolerates the climate there (just barely). It is native to the coastal plain of the Southeast. Another species, sweetbay (*Magnolia virginiana*) (Figure 25) has begun to make an appearance in some midwestern nurseries. It

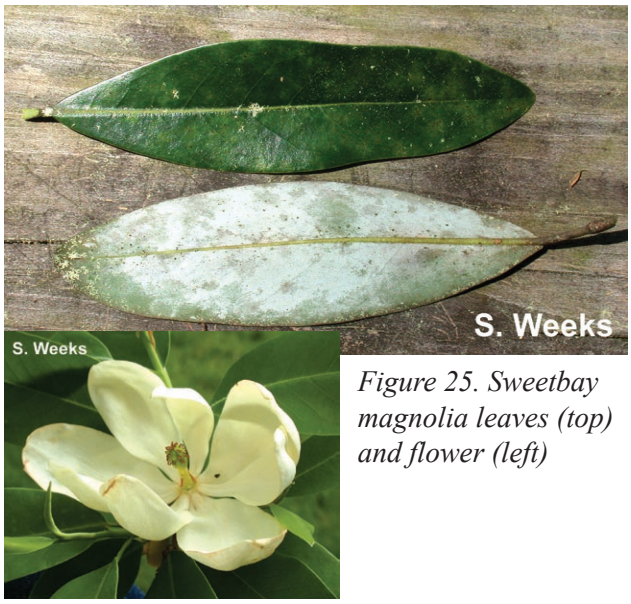

Figure 25. Sweetbay magnolia leaves (top) and flower (left)

is a large tree in its native swampy habitat of the south, but a hardy, much smaller form is being marketed by horticulturists. It is easily distinguished by its smaller, leathery leaves (up to six inches long and perhaps two inches wide) with obvious whitish undersides.

Propagation

Fruit should be collected in the fall after the "cones" open. Individual seeds should have the fleshy outer coat removed by scraping with a fingernail in a water bath. Allow seeds to air dry for several days before storing in a ziplock bag in the refrigerator over winter. Umbrella magnolia seeds will germinate the same spring as planted. Cucumber magnolia seeds will germinate the second spring after planting. Plant seedlings in protected areas, preferably in a partially shaded location with rich, deep, moist soils. Growth is rapid once established. One word of caution about transplanting seedlings: they have very fleshy, tender roots that are sensitive to disturbance. Be gentle!

Sources

Native species of trees and shrubs are difficult to purchase through nurseries, but several that offer magnolias are:

- ArborVillage, 15606 County Rd. CC, PO Box 227, Holt, MO 64048
  both native magnolia species sold
  www.arborvillage@aol.com
- Arrowhead Alpines, PO Box 857, Fowlerville, MI 48836
  umbrella magnolia sold
  www.arrowheadalpines.com
- Johnson's Nursery Inc., W. 180 N. 6275 Marcy Rd., Menomonee Falls, WI 53051
  umbrella magnolia sold
  www.johnsonsnursery.com
- Mellinger's Inc., 2310 W. South Range Rd., North Lima, OH 44452-9731
  both native magnolia species sold
  www.mellingers.com
- Oikos, PO Box 19425, Kalamazoo, MI 49019-0425
  both native magnolia species sold
  www.oikostreecrops.com

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