

The wonderful Ashe magnolia

Charles E. Salter

I have an Ashe magnolia growing on a street corner at my residence in Tallahassee, Florida. When it blooms cars stop suddenly and pull over to the curb. People get out of the car, walk up to the tree, and stare. I can accurately say Ashe magnolia stops traffic! It looks and smells great.

Part of the reaction to my tree is because you don't see an Ashe magnolia on every street corner. In fact, you don't see them often anywhere, which is a great pity because they have great horticultural value. The foliage of Ashe magnolia (*Magnolia macrophylla* var. *ashei*) is attractive. The leaves mature at 12 to 16 inches in length. Leaves are 6 to 8 inches wide above midpoint, tapered to their base with a rounded ear on each side of the midrib (auriculate). The apex of the leaf is rounded with a pointed tip. The leaf is thin and flexible in a breeze, deep green on top and whitish on their undersides. The petiole is 4 to 5 inches long, stout, and extends as a midrib to the tip of the leaf. The deep summer green turns to yellow in the fall and, after falling, the upper surface turns a chocolate brown while the lower surface turns silvery-white. Fallen leaves are beautiful and unusual in autumn leaf floral arrangements. The leaves are borne in a whorl at the end of branches and twigs and thus form an open crown of exotic texture.

The flowers of Ashe magnolia are large, spectacular, fragrant and numerous. By mid-March you can gently press the growing bud and feel a hard little blossom forming among the leaves. By early April the terminal bud has become small hairy leaves 6 to 8 inches long with a large upright blossom bud standing from its center. The unopened bud is 6 to 8 inches tall with stipules folding down around the short, stout flower stalk. The opening of the flower is progressive, allowing plenty of time for enjoyment. One day the blossom will start to unfold, and shows white petal tips clothed in light green membranous stipules. The flower form for this day is like a slender Grecian urn or an elongated tulip blossom. It enlarges through the day and night to full anthesis



Above: First day flower, in the "vase form." Flower should be hand pollinated when in this stage.

Below: A two day old flower. Note pollen, seed cone and irregular blotching at petal bases.



early on the second day. The fragrance is very strong in the new flower.

The fully open Flower is from 12 to 15 inches across, with nine petals (tepals to magnolia experts) in a circular arrangement. These petals are creamy white, sometimes with a red blotch at the base of each petal, or sometimes with a red or purplish blotch at the base of alternate petals, or sometimes with a faint blotch or no blotch at the petal base of all. A small number of trees have pure white blossoms. The color of the blotch varies. There is an area near the Apalachicola River where the petal blotch is bigger and a deeper red than elsewhere. An area near Pensacola has trees that blossom with a blotch on alternate petals only. Most Ashe magnolia specimens have flowers with red blotches on every petal.

In the center of the petals is a short stalk where a small cone covered with short processes that are pistils stands. Surrounding the shaft below the pistils are numerous rodlike stamens. The pistils and stamens are white.

Some trees form two blossoms at the end of a branch. These blossoms do not develop simultaneously, and thus will bloom three to five days apart. I have never seen more than two blossoms per branch or twig, and have never seen them bloom simultaneously. Further, I have never seen a tree where all the branches bear two blossoms.

The special charm of the Ashe magnolia is its precocious blooming habit. I have grown many specimens which bloomed at age two. Most specimens will bloom at age three or four, and by age ten years the tree may be 10 to 12 feet tall and produce a blossom on half its branches, about 12 to 15 blossoms. I have specimens in my home garden that are 18 years old which are 20 to 25 feet tall which produce sixty to ninety flowers per tree. The blooming is in irregular sequence—not many bloom at the same time. So, I usually have open flowers from April 1 to April 15 each year. They keep the garden perfumed.

For contrast, I have a true *Magnolia macrophylla* growing adjacent to Ashe magnolia. Joe McDaniel brought it as a gift when he visited for seed. At age 14 the *Magnolia macrophylla* had one flower. At age 15 it had one flower. At age 16 it had five flowers. The adjacent Ashe magnolias have been flowering since age 3 and producing viable seed crops since age 8 years. The two species are not likely to hybridize because their blooming season does not overlap.

The bark of Ashe magnolia is smooth and light gray on stem



*A young Magnolia macrophylla var. ashei.
Note five branches and four flowers.*

and branches, but new growth is a light green for a full season. Wood is light, pithy, and brash. Branches break easily, so kids shouldn't climb in them.

The roots of the species are soft, fleshy and whitish in color. They are shallow except when growing in coarse, loose sand. This soft fleshy nature of the roots makes them subject to fungus infection, particularly in soils they stay wet for extended periods.

The normal size of Ashe magnolia is a small tree 18 to 25 feet tall. In cultivation the species grows rapidly. Secondary branches start forming at age four or five, and do tertiary branching annually. By age ten years, a specimen may be 12 to 15 feet high, be about the same width, and bear from twenty to thirty blossoms. In adequate light the normal crown is domed shaped with many branches at many angles. The largest open grown specimen I have seen is about forty years old, 30 feet tall and 38 feet wide. It produces about two hundred blossoms annually.

Ashe magnolia form is strongly influenced by light. Planted at the edge of a dense canopy they will grow toward the light in a leaning form with few side branches. In nature they often occur under a dense canopy where direct sunlight never strikes them (so they have big leaves)! Such specimens are spindly with few flowers, and many get broken from falling limbs. The species will sprout from roots or stems if it gets broken. Such Ashe magnolias give no hint of their potential beauty.

The largest Ashe magnolia I have seen was in Torreya State Park on the east slopes of the Apalachicola River south of Chattahoochee, Florida. It was an old tree growing among other trees of fifty years and more. It was about 60 feet tall with a stem diameter about 12 inches and no limbs on the lower 35 feet of stem. Its crown extended into an opening in the forest canopy and had a regular form. It fell victim to a recent hurricane before I returned to measure it, but I believe it was as big as the species ever gets.

Ashe magnolia grows on a wide variety of soils. It prospers on deep sandy soils that are well drained, with a high humus content in the upper layer of soil. It will be robust if there is clay or limestone at six to ten feet below the soil surface. It is highly tolerant of soil variations unless the soil stays wet for several weeks. It prospers in west Florida areas where limestone appears at the soil surface. It prospers in sandy, flatwood soils that do not have a hardpan. Ashe magnolia is sensitive to pH only when it is grown in a nursery pot.

Light is critical only to the beauty and form of Ashe magnolia.

It is adapted to persist in conditions of very low light intensity by its large leaves. It adapts to full sunlight by reducing its leaf size and growth rate.

One day I planted three Ashe magnolias. Two were planted under tall pines where the light intensity was about 75%. One was planted 100 feet away on the west side of a pecan tree where it was exposed to full sun from noon to sundown. At age ten years the two specimens under the pines were 15 feet tall and 18 feet wide. They each produced about 50 blossoms and forty seed cones per season. The specimen standing in full afternoon sun was 9 feet tall and six feet wide, and had leaves that were only two-thirds the size of the shaded specimens. The leaves also showed some sunscald, and started turning yellow by late July. However, the full sun did not seem to diminish the blooming and seed setting. The ideal light conditions for the species seems to be 60% to 75% of full light intensity, with an added benefit if the morning sun provides most of the light with some additional shading by other trees in the afternoon.

The water requirements of the Ashe magnolia are variable, just like the weather. In its native habitat normal rainfall averages 50 to 60 inches a year. The area has a six week period of low rainfall in April and May and a second one in September and October. Frequent rains occur in winter and in the summer thunderstorm season of July and August. Like many other native species, if you help Ashe magnolia get established you can leave it to Mother Nature.

Specimens transplanted from containers need weekly watering during droughty periods only. When the transplanted specimens have been in the ground for a full year, they need supplemental watering only in prolonged drought. Too much water will subject the trees to fungus infection by pythium, a fungus that promotes rootrot.

The seed cones develop after the flower blooms in April. They grow to 3 to 4 inches high and 2 inches in diameter on short, stout stalks. They become a beautiful rose color at maturity, generally in late July and August. In native stock the ripening is slower, ripening throughout September. They are subject to heavy squirrel feeding when fully developed. Seed cones dry and shrink as the season progresses, exposing the orange or red seed in their many ovules. One full-size cone will produce up to 90 seed. When the pulp is removed from a seed, it shows a velvety brown seed coat with flattened oval shape and a pointed tip. The ripening rosy red cones are an attractive characteristic.

The range of Ashe magnolia is an astonishment. The species has a limited natural range but it will prosper in faraway places. The species is found in Florida from the Ochlochnee River near Tallahassee westward throughout the Florida Panhandle, in some of the southernmost counties of Alabama and Mississippi, in central Louisiana, and in the Sabine River area of east Texas. It mostly occurs on the sideslopes of watercourses where fires seldom occur. *Magnolia pyramidata*, *Magnolia acuminata* and *Magnolia cordata* are large-leaved deciduous magnolias that touch Ashe magnolia's range in small numbers at scattered locations. There does not appear to be any hybridizing going on among the species. Ashe magnolia is not numerous anywhere in its range. Diligent searching will turn up some scattered groups of varying size on most of the creeks and rivers in its range.

The total population is in thousands rather than in hundreds or millions. It is a reproducing species largely disjunct from similar members of the *Magnolia* family. It has a reproductive handicap which I will mention later.

In 1974 and 1975, I began to gather seed and learn how to propagate Ashe magnolia. By 1978 I was selling them to whomever wanted one (it wasn't a large crowd). I got reports through the years from many of my customers that Ashe magnolia will grow in Washington, Oregon, Illinois, Michigan, Indiana, Ohio, Pennsylvania, New York, Connecticut, Massachusetts, Belgium and France. What an astonishing range for a species with a restricted natural range. Makes you want to stand up and cheer!

Through my native plant nursery I became acquainted with Josephine Henry of the Henry Foundation for Botanical Research in Gladwyn, Pennsylvania (near Philadelphia). Ms. Henry has great knowledge about native plants. She has grown Ashe magnolia at Gladwyn for many years, and she assured me the species tolerates the climate well. The Arnold Arboretum at Jamaica Plain, Massachusetts, the Brooklyn Botanical Garden, and Princeton University have experience with Ashe magnolia. I think the species will grow anywhere except the Great American Desert! In the northern states wisdom dictates a protected site. I doubt it would survive on the exposed shore of Lake Erie.

The propagation of Ashe magnolia is not difficult and is profitable. Vegetative propagation of the species is possible, but isn't very practical because it has relatively few twigs and branches. However, cuttings taken from new growth in May when the wood is "semi-hard" can be rooted using standard hormones,



*Above: Two flower buds on one branch terminal.
Note the difference in development.
Below: The Ashe magnolia in full anthesis. Note the
dry darkened pistils and partially dry pollen.*



popular rooting mediums, and low frequency mist. Results vary.

Propagation by seed is easy, once you learn to avoid the species's weaknesses. The weaknesses are non-viable seed and susceptibility to fungus attack. Ashe magnolia does produce some viable seed naturally, but it is a sometime thing. One year I travelled 400 miles visiting all the trees I knew about. I gathered a large grocery bag of seed cones. I extracted 950 seed. Twenty of them survived the flotation test. I planted the twenty—four sprouted, and two survived!

I mentioned earlier that flower opening is a gradual process. During the first day (when the flower is in a partially open vase form) the pistillate processes on the cone are mature, soft, and receptive to pollen; but the pollen in the same flower is not yet dispensable. On the second day when full opening occurs early, both pollen rods and pistils dry rapidly. The pistillate processes dry rapidly and form a dry, darkened cuticle that rejects pollen grains. Self pollination is thus impeded. The period when a single flower has pollen dry enough to disperse and pistils moist enough to accept pollen is very short. It may only be two hours on a dry windy day.

Hand pollination of flowers is the simple cure for low viability of seed. My method is very simple. I go to a flower that opened yesterday and gather a "pinch" of pollen rods between my thumb and forefinger. I drop the pollen rods down the top of a partially open flower (in the vase form), grasp the unopened flower in my whole hand and shake it vigorously (be careful not to break it). Very thorough pollination occurs. This method allows you to collect 60 or 70 viable seed from a single cone.

The seed crop may need spraying with Malathion if sucking and chewing insects appear, but they are not normally a big problem. Twig borers sometimes cause twigs to break off, but adventitious buds sprout quickly and repair the damage. Squirrels are a big problem. I need an air rifle to discourage them. That isn't enough. I also make a round tube 8 inches long from window screen wire big enough to slip over the seed cone. You can exercise all your ingenuity on squirrel protection. Good luck!

The seed cones mature rather early. In Florida the cones turn rosy red and begin drying on the tree in late July or early August. When the seed cone has an open slit in the ovule that shows the orange seed inside it, it's time to harvest them before birds and squirrels do. Store the cones in a safe place for a few days while they continue drying. When the seed protrudes from the cone, strip them off with your hands. These seed are covered by fleshy

pulp, and now is the time to reduce the cleaning job.

Put the seed in a water filled glass jar. The seed that float are not viable, so discard them. For a modest volume of seed (perhaps a pint) I recommend cleaning by abrasion. I make a 2 foot by 2 foot wood frame and staple 1/8 inch mesh hardware screen over it. Then soak the seed in water for two hours. Pour the seed onto the screen and gently rub the seed over the wire to dislodge the pulp. You will need a water spray to wash away the pulp. if you have a large volume of seed you can use a food blender with a slow speed (chop or grind). Put 2/3 water and 1/3 seed in the blender container and turn it on chop (a slow speed) for short bursts of agitation. Pour off the water and pulp and you seed are "relatively clean." You injure some seed this way but it's fast. Of course, if you have large seed crops annually buy a commercial seed depulping machine. The clean seed should be spread on paper or cloth for a day or two. Then bag them and place them in cool storage.

Ashe magnolia seed have no dormancy requirement. They can be planted anytime between September and March 15. I got my heaviest sprouting from October planting. Squirrels broke off some seed cones from my trees in June. I let the cones dry a bit, cleaned the seed and planted them on June 17. About a dozen sprouted in early July. I was surprised to find the seed fully mature and sproutable that early.

Ashe magnolia seed should be planted in a well-drained sprouting medium at 1/4 to 1/2 inch deep. Avoid heavy watering during germination. Germination occurs in 15 to 30 days, depending on temperature. Let them grow until they show two or three true leaves. If you leave the sprouted seed in their tray for an extended period, treat the tray with a soil drench of Ridomil or Subdue at 1/2 teaspoon per gallon of water.

The seedlings should be potted and put under 50% shade. The potting mix must be well drained—60% sand, 10% peat and 30% shredded pine bark or perlite is good. Osmocote in the potting soil is best for vigorous growth. The seedlings will grow vigorously and may require staking to prevent bent stems at groundline. Growth of 12 to 15 inches the first season is common.

The greatest threat to potted seedlings is from fungus. When nights become warm and humid in the spring, when summer brings 90 degree temperatures and frequent rains in July and August, and when autumn brings chilly nights and warm days—fungi become virulent. A soil drench of Subdue or Ridomil will protect the roots, and a spray of Subdue or Benomyl will

protect leaves. When Ashe magnolia is transplanted from pot to soil, it is only one year until roots bind and anchor the tree and become resistant to fungus infection.

Seed for Ashe's magnolia are seldom available commercially. You can grow your own seed for nursery use. Remember, the species blooms early. Five to ten trees, five years old, will produce enough for hundreds of seedlings. Then the supply of seed will increase each year. If you hand pollinate the flowers, you can have seed every year. I suspect the supply of seed in northern states is very limited. The production of seed in Florida is increasing and only needs some demand to grow rapidly.

Dan Miller, 3532 Trillium Court, Tallahassee, FL 32303 has a small hobby nursery and will ship small orders of plants. Woodlanders, Inc., 1128 Colleton Avenue, Aiken, SC 29801 (803-648-7522) is a well known native plant source that has Ashe magnolia. Okefenokee Growers, P O Box 4488, Jacksonville, FL 32201-4488 (904-356-4881) is a wholesale nursery that has supplies of Ashe's magnolia in the hundreds. Superior Trees, Inc., P O Box 9225, Lee, FL 32059 (904-971-5159) is a wholesale nursery that will have Ashe magnolia available in 1996. This nursery has developed a seed orchard and can grow many plants, including liners, if requested.

If Ashe magnolia continues as a little known species it will be because there is no interest in it. There are people willing and able to produce it. 