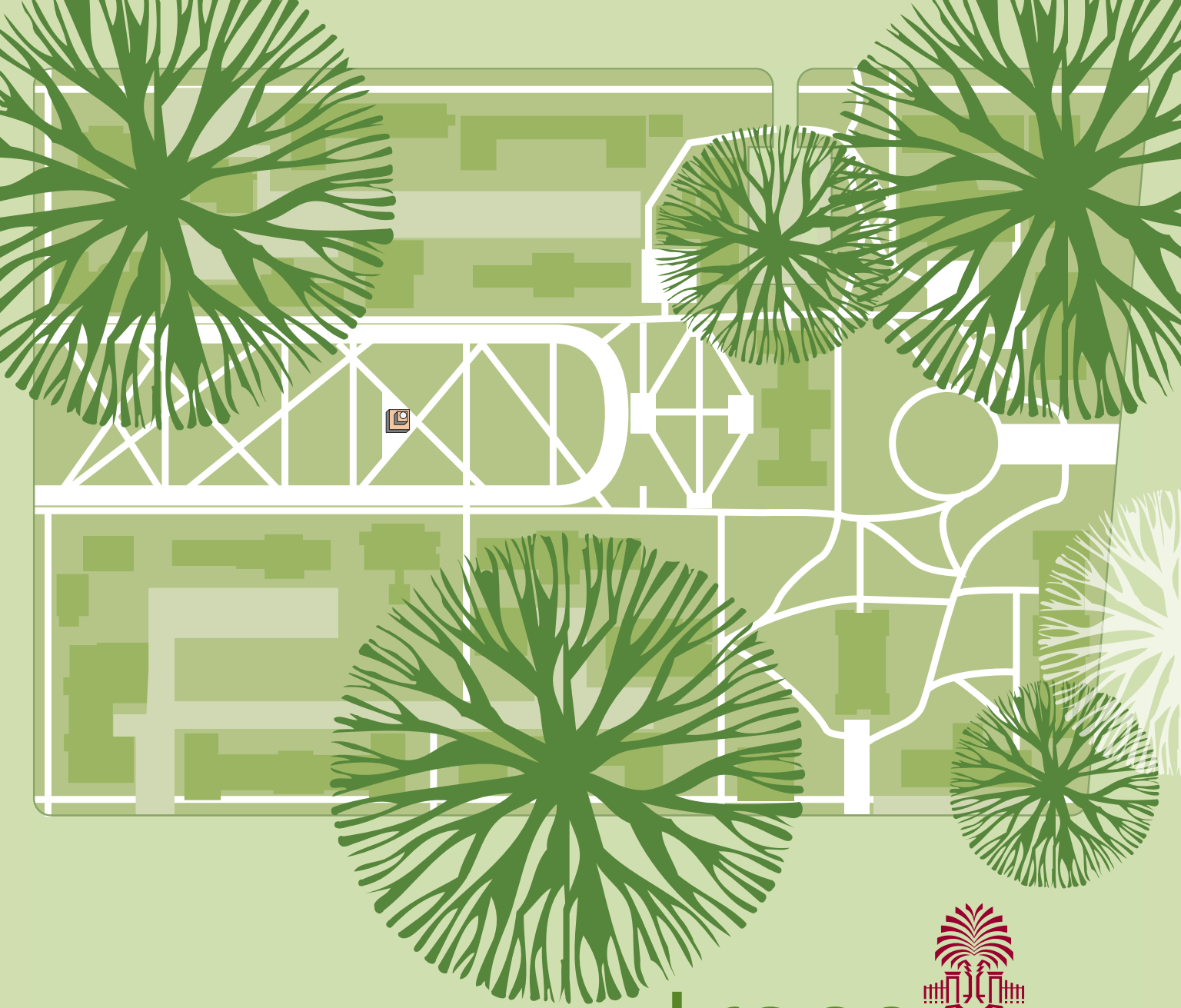

trees on the University of South Carolina's historic campus

A Walking Tour

UNIVERSITY OF SOUTH CAROLINA

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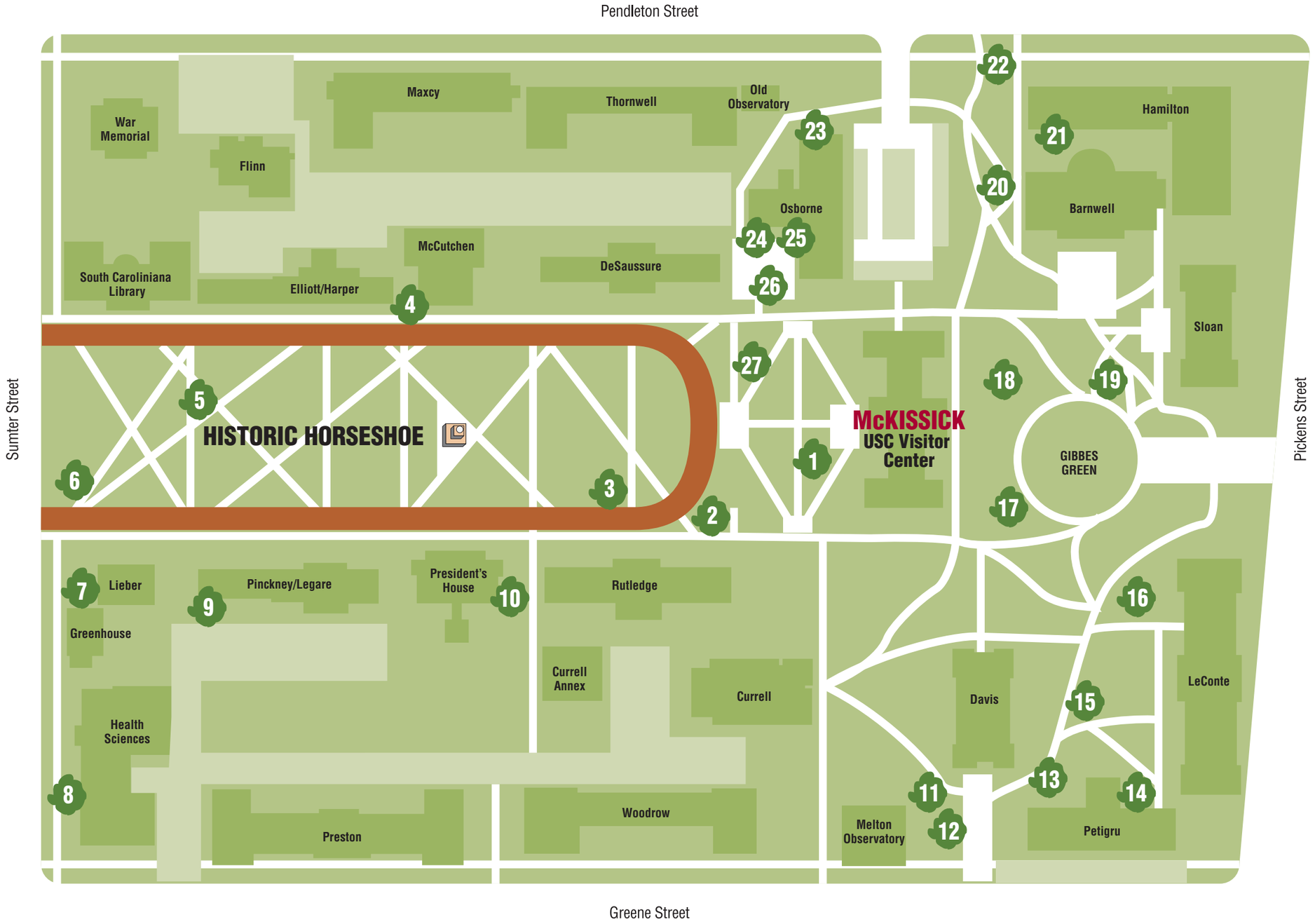

trees on the University of South Carolina's historic campus

1 **Southern Magnolia** *(Magnolia grandiflora)*
2 **Live Oak** *(Quercus virginiana)*
3 **American Elm** *(Ulmus americana)*
4 **Water Oak** *(Quercus nigra)*
5 **Willow Oak** *(Quercus phellos)*
6 **Palmetto** *(Sabal palmetto)*
7 **American Holly** *(Ilex opaca)*
8 **Eastern Red Cedar** *(Juniperus virginiana)*
9 **Red Tip** *(Photinia serrulata)*
10 **Crape Myrtle** *(Lagerstroemia indica)*
11 **Yulan Magnolia** *(Magnolia denudata)*
12 **Serviceberry** *(Amelanchier arborea)*
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19 | Sawtooth Oak
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Ginkgo biloba

Did You Know?

Even though many of the Horseshoe's trees are large and stately, none was part of the original 19th-century landscape. The first cultivated trees on the Horseshoe, pictured in illustrations from the 1800s, have all been replaced—some of them several times. Some of the larger trees on the Horseshoe are relatively young and were planted since the 1930s.

The University received a Green Star Award from the National Wildlife Federation for its leadership in environmentally sustainable campus development. Especially noted were the campus' recycling efforts and grounds management programs.

A large tree annually removes about 330 pounds of carbon dioxide from the earth's atmosphere.

Trees are the longest-living organisms on earth; some survive for more than 4,000 years.

Welcome to the historic campus of the University of South Carolina.

Beginning in 1805 with the construction of its first academic building, Carolina's historic Horseshoe took shape in the first half of the 19th century, creating a cloistered quadrangle that is the jewel of the campus. The Horseshoe's campus forest, characterized by stately trees of varied species, has been named as a "Heritage Trees of South Carolina," and the University has received a "Tree Campus USA" designation by the Arbor Day Foundation.

The trees found on the Horseshoe and nearby Gibbes Green are campus treasures, and some of the most significant of them are numbered and placed in their approximate locations on the foldout map. The numbers are arranged in a sequence for a suggested self-guided tour. A description of each numbered tree appears in the accompanying text.

1 Southern Magnolia

Magnolia grandiflora

The Southern magnolia is truly one of the mainstays of classic Southern folklore and scenery. Its low-swept branches and evergreen, leathery leaves provide a standard backdrop for many settings. The flowers are enormous and, in full bloom, offer a very sweet lemony fragrance that is sometimes almost overpowering. Botanists regard the flowers of magnolias as exhibiting a number of primitive floral features; the flowers themselves are visited by a variety of insects, including beetles. The United Daughters of the Confederacy (UDC) planted this particular tree in 1954 to honor the memory of General Robert E. Lee.

2 Live Oak

Quercus virginiana

Live oaks are native to the coastal plain from Virginia to Texas. It is the classic Southern tree, with its spreading branches draped with clinging Spanish moss. The stiff, leathery leaves are somewhat boat-shaped and are evergreen. The bark of old trees is blocky and dark, nearly black, and the wood is heavy and hard. It is said that the strength of our historical naval ship "Old Ironsides" is the result of live oak planks used during construction. Phillip Miller, director of the Chelsea Physic Garden in England, named this species in 1768.

3 American Elm

Ulmus americana

The American elm was introduced to USC's Horseshoe more than 100 years ago. Our population of elms on the Horseshoe was slowly killed off, leaving only these two surviving specimens. After World War II, the elms were gradually replaced by the oak species present today. The American elm, along with winged elm (*Ulmus alata*) and slippery elm (*Ulmus rubra*), are the three elm species native to South Carolina.

4 Water Oak

Quercus nigra

The leaves of the water oak are narrowed at the base and widened toward the tip, giving it somewhat of an ice-cream cone or tornado effect. Seedling leaves or those from sprouts, however, may be more elaborately lobed. This quick-growing oak is a member of the "red" oak complex. It is commonly seen in bottomland forests of the Southeast, where it sometimes attains large size. The bark of water oak is fairly smooth and mostly gray. The acorns are relatively small and in good "mast" years will be produced in tremendous numbers on the stems. Although it is a resident of damp swampy places, it adapts well to urban planting, producing good shade. The unusual growth and lumpy shapes seen on the trunk of this particular tree are due to a bacterial infection.

5 Willow Oak

Quercus phellos

The willow oak is a natural resident of damp bottomland forests and, occasionally, higher terraces and ridges. It grows in every county of South Carolina and is widely distributed in the Southeast. Its leaves are distinctive for oaks, in being long and narrow, similar to those of our native willows. In cultivation, a willow oak makes a magnificent shade tree and is much prized along streets. This species is another member of the native "red" oak complex.

6 Palmetto

Sabal palmetto

The palmetto, or cabbage palm, is native to the southeastern coast from North Carolina to the Florida Panhandle, as well as the Bahamas and Cuba. It has broad, fan-shaped leaves expanding to a yard or so across, and a thick trunk growing perhaps 30 feet tall. It prefers a habitat of maritime woods and brackish marshes. On June 28, 1776, American patriots stationed behind the protection of stacked palmetto logs successfully repulsed a British invasion at Charleston Harbor. This log emplacement was subsequently named Fort Moultrie, honoring the commanding officer of the battle. On March 17, 1939, the South Carolina Legislature, by joint resolution, made the palmetto the official state tree of South Carolina.

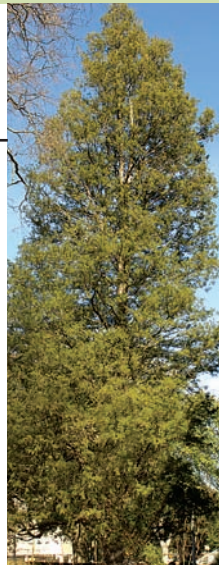
7 American Holly

Ilex opaca

With its brilliant red berries and bright evergreen foliage, the American holly brings to mind holiday times during the frosty winter; it is indeed a native species, growing in a variety of habitats. Its smooth gray bark is distinctive. The leathery, deep green leaves are armed with a number of stout, marginal spines. This is a dioecious species, generally occurring as male or female individuals. The females, of course, are the berry producers. This beautiful plant commonly forms a columnar crown. It is widely grown in cultivation, and a large number of horticultural varieties have been developed from it.

8 Eastern Red Cedar

Juniperus virginiana



There are several different kinds of conifers called "cedars." (The true cedars belong to the genus *Cedrus*.) The Eastern red cedar is a native American species, familiar to everyone living in the eastern half of the United States. Foliage of young plants and branches is prickly and needle-like, while mature leaves are flat, scale-like and overlapping. Large trees have shreddy, reddish bark. The cones are produced only on female plants and are modified into berry-like structures, which are relished by many bird species, including cedar waxwings. Individual trees tend to be columnar, or with a somewhat egg-shaped crown. Very old specimens may have a wide asymmetrical crown.

9 Red Tip
Photinia serrulata

Most of the various species of "red tips" are native to southeastern Asia, and there are several hybrid forms as well. About half of the known species are evergreen, the others regularly losing their leaves. One variety is susceptible to leaf spot disease, but the large individual behind Legare College, an evergreen species, is resistant. Its flowers are attractive and white—but somewhat malodorous—and are produced in clusters in the spring. Small apple-like fruits are produced after the flowers, and these turn an attractive red color and are relished by birds.

10 Crape Myrtle
Lagerstroemia indica

The crape myrtle (the name is sometimes spelled "crepe") is native to southern Asia, primarily Japan and Korea. This species is widely cultivated in the Southern states, where it enjoys considerable popularity, and with good reason. It was introduced into America by the French botanist André Michaux, first grown in his Charleston garden in the late 18th century. The bark on older trees is smooth and glossy. The flowers range from white to deep red, and the petals are crinkled, or ruffled. Fall foliage is typically orange to somewhat bronzed. Crape myrtles are especially useful as ornamentals in the South as they are quite tolerant of extended periods of hot, dry weather. The specimen at the President's House is one of the oldest plants on the Horseshoe. Multiple trunks are featured with this plant, and it flowers regularly each summer, producing thousands of small, pink, ruffled blossoms. Falling in sufficient numbers, the flowers create an attractive pink "lawn."

11 Yulan Magnolia
Magnolia denudata

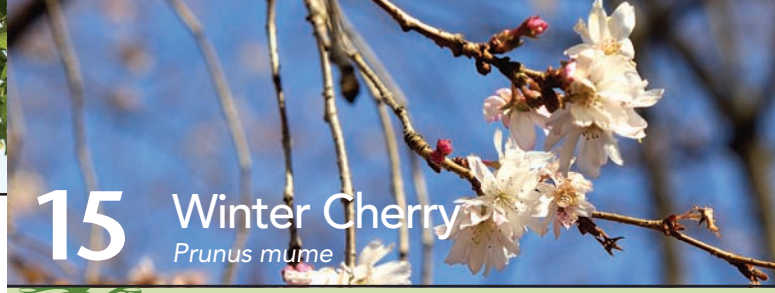
The Yulan magnolia is a very early blooming species on our campus, commonly in full bloom before the danger of frost has past, sporting beautiful pale pink blossoms. As in all magnolias, there are many flower parts: the petals and outer sepals intergrade. Many stamens are situated at the base of an aggregate of pistils. After blooming, the pistils will develop into a hard, crooked, cucumber-shaped fruiting structure. This species occurs widely in portions of eastern and central China. Unlike our native *Magnolia grandiflora*, the Yulan magnolia is a deciduous species, losing all of its leaves in the autumn.

12 Serviceberry
Amelanchier arborea

"Serviceberry" is sometimes called "shadbush." All the species belong to the genus *Amelanchier*. Most are trees, but some species are low and shrubby. This is one of the earliest blooming trees on the USC campus, offering snowy white flowers before the leaves have fully developed. Each flower will produce a juicy red fruit, in structure much like a miniature apple. In the wild, these fruits are an important source for wildlife food, especially for birds … but humans like to snack on them, too.

13 Cherrybark Oak
Quercus pagoda

The cherrybark oak is one of more than 30 species of oaks that grow naturally in the Carolinas. The genus *Quercus* (oaks) represents the largest genus of native trees in the United States. Many of the oaks hybridize, adding to their variation throughout our region. Cherrybark oaks prefer floodplains and bottomland margins. The leaves of this individual regularly fall each autumn at Carolina, each leaf in profile shaped like a pagoda.



15 Winter Cherry
Prunus mume

Our winter-blooming cherry shows its welcome color long before spring has arrived and long before its leaf buds begin to swell. The white or very pale pink blossoms are especially attractive against the dark branches. These beloved plants have greeted students trudging along on their way to class between LeConte and Davis colleges for many years and foretell the spring season with its flowers and warmth.

14 Sugar Maple
Acer saccharum

Sugar maple is a variable species that exhibits a number of varieties or subspecies. It is a handsome tree providing excellent shade in the summer, as well as outstanding autumn color. It is widely planted in the eastern United States. This species is tolerant of considerable shade and prefers soils that are fairly moist. This particular one is the largest example on USC's campus. As with all maple species, the "female" trees are the ones that develop the characteristic winged fruits.

16 White Oak
Quercus alba

The white oak is one of the classic examples of an all-American tree. Its whitish, flaking bark and the prominently whitened undersides of the distinctly lobed leaves are unmistakable. This species is broadly distributed from eastern Canada to eastern Texas and northern Florida; in South Carolina, it occurs naturally in every county. This important canopy species provides shelter and food for a variety of wildlife. It was one of the most useful trees for early colonists. The broadly rounded crown of the specimen at LeConte College is characteristic of matured individuals.

17 Yellow Poplar
Liriodendron tulipifera

The yellow poplar is a member of the magnolia family. This native species is widespread in the eastern United States and is the tallest hardwood species in the area, with some enormous individuals easily over 150 feet. The fragrant wood is strong and durable, and the trees generally grow rather quickly. The bowl-shaped flowers are attractive, consisting of three sepals and about six yellow-green petals. The petals are colored as well, with a bright orange band toward the base. When blooming, the flowers are perhaps most commonly seen if they are blown off during high winds, littering the ground. The leaves of tulip poplars have a unique shape and are somewhat tulip-shaped.

18 American Basswood
Tilia americana

American basswood has proven to be one of the most useful of American tree species. Its wood is light and strong and is used for boxes and for making furniture. Tissues under the bark exude a clear sap, which was frequently used in the preparation of traditional medicines. The flowers are small and yellow, highly fragrant, and produce plenty of nectar. This is a favorite tree of bees and thus provides excellent honey. The flowers are attached to a slender stalk, which is itself fused to a narrow bract. When the fruits are ripe, the bract falls away, taking the fruits with it to the ground.

19 Sawtooth Oak
Quercus acutissima

At nearly 70 feet tall, this sawtooth oak is the largest of its kind in the state. The regularly checkered bark on the large tree is attractive and distinctive. The leaves are slowly deciduous, falling away gradually in the winter. Each blade is prominently equipped with a slender, pliable bristle at the tip of each of the marginal teeth, and the leaves give a strong impression of the leaf of a chestnut. The acorns are relatively large, with a remarkable cap. Instead of short scales, the cap exhibits elongated, somewhat bristly scales. This species is often planted in managed forests as a source of wildlife food.

20 Ginkgo
Ginkgo biloba

One specimen of this unusual gymnosperm grows on our campus. This plant is truly a living fossil, for it is commonly found in geological deposits about 60 million years old. Fossils of even more ancient species of ginkgo occur, too, but *Ginkgo biloba* is the only surviving species of the genus. Today, it occurs naturally—apparently—only in one part of eastern China, but it is grown now in cultivation in many parts of the world. Its fan-shaped leaves are characteristic and unique. The plants have excellent autumn foliage, with the leaves turning a bright yellow-gold. André Michaux introduced it to Charleston in the late 1780s. The "fruits" occur on female trees only and have an unpleasant odor as they mature.

21 China Fir
Cunninghamia lanceolata

The China fir is not a true fir at all: those species belong to a different genus. China fir plants typically develop multiple trunks, and these are adorned with somewhat soft, shreddy, reddish bark. The branches often droop. Mature branches feature sharp-pointed leaves, and these can be very prickly. James Cunningham discovered this species in China in 1702. Robert Brown named the genus in his honor in 1826. It is a valuable timber tree in China, reaching a height of 80 feet. This conifer, with its whorled branches, small linear leaves, and evergreen character, make it a popular cultivated tree. In America, it is hardy as far north as Pennsylvania. This distinctive tree is related to our local bald cypress, and to the redwoods of the west coast.

22 Slash Pine
Pinus elliottii

Interestingly, there are not many pine trees on the USC campus; this is one of the largest. Slash pine is a tree native to South Carolina but is restricted to the coastal areas south of and around Charleston. An excellent source of pulpwood, this species was widely planted by the thousands in the 1960s, and in areas far from its normal range. Unfortunately, the wood of slash pine is fairly brittle, and its branches break readily during ice and sleet storms. The needles are attractive and held in clusters of twos and threes. The seed cones are relatively large and when ripe turn a glossy orange-brown.

23 Tea Olive
Osmanthus fragrans

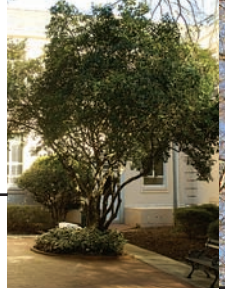
The common name of this plant is "tea olive," a sweet-smelling shrub that may grow to 30 feet tall. It produces small white flowers in the early spring as a cultivated shrub in the American South, often blooming again in the autumn. A native of the Himalayas, China, and Japan, it was collected and named by Juan Loureiro (1715–1795), a Portuguese missionary and botanist in China. It first appeared in England in 1771, and it was introduced into Charleston in the late 1780s by the French botanist André Michaux. It became a very popular shrub in the antebellum South for its highly fragrant flowers and its evergreen character.

24 Chaste Tree
Vitex agnus-castus

Traditionally, the chaste tree has been assigned "membership" in the vervain (Verbena) family, although more recent evidence suggests a strong affinity with members of the mint family. The leaves grow two at a time up and down the stem, each one equipped with five or seven sharply-pointed narrow leaflets, all attached to the apex of the leaf stalk. When crushed, the foliage emits a strong medicinal scent. Flowers are clustered at the ends of stems. The flowers themselves are small, but the clusters are notably an attractive chalky blue, or sometimes purple. This species is completely deciduous, losing all of its leaves in the winter.

25 Banana Shrub

Michelia figo



The common name of this plant, a native of China, is "banana shrub." There are over a dozen species of these trees and shrubs, all related to magnolias. The genus *Michelia* (pronounced "mee-SHELL-ia") was named by Carl Linnaeus in 1753 to honor a Florentine botanist, Peter Michel. Banana shrubs grow to 15 feet as an evergreen plant in the Southern states. The flowers resemble small cream-colored magnolia flowers with a rather strong banana fragrance. The blossoms of *Michelia* generally form clusters among the leaves differing from magnolias, which generally have large flowers situated individually at the ends of branches.

26 Deodar Cedar

Cedrus deodara

This stately tree is a native of the Himalayas. Its strong durable wood has been prized for centuries, and it is widely grown as an ornamental tree outside its natural range. The needles are bluish-green, and both male and female cones will be produced. The male cones fall after shedding their pollen in the spring while the female (seed) cones stay on the branches, vertically, for considerable time. Deodar cedars tend to have pendulous branches, as well as flexuous or nodding terminal stems.

27 Swamp Chestnut Oak

Quercus michauxii

The swamp chestnut oak is a magnificent tree with very large acorns. The oaks are basically divided into two groups—the white oak group, containing Swamp Chestnut Oak, and the red oak group. The acorns of the white oak group are sweeter and have less tannin than the more bitter acorns in the red oak group, and are thus preferred as a food source by animals like deer, squirrels, and turkeys. The wood from the white oak group has better cooperage, therefore wine and whiskey kegs are made of white oak wood while a "keg of nails" is usually made of red oak wood. The wood of the swamp chestnut oak has been used for basket making: strips of the wood cut in elongated pieces are traditionally woven together. The swamp chestnut was named by Thomas Nuttall in 1818 to honor Francois Michaux, the father of American forestry. This species is one of the most magnificent of our native oaks. It is a tree of damp bottomlands and occurs naturally in floodplain forests prone to occasional flooding. Each leaf exhibits 12 to 15 short, rounded lobes along each margin, and the underside of the leaf blade is commonly white.

Tree selection identification and text were provided by John Nelson, curator of the USC Herbarium, and Professor Dave Rembert, Emeritus Professor of Biology, in consultation with USC Horticulturist Tom Knowles.

The A.C. Moore Herbarium and Plant Identification Service

A.C. Moore Herbarium
University of South Carolina

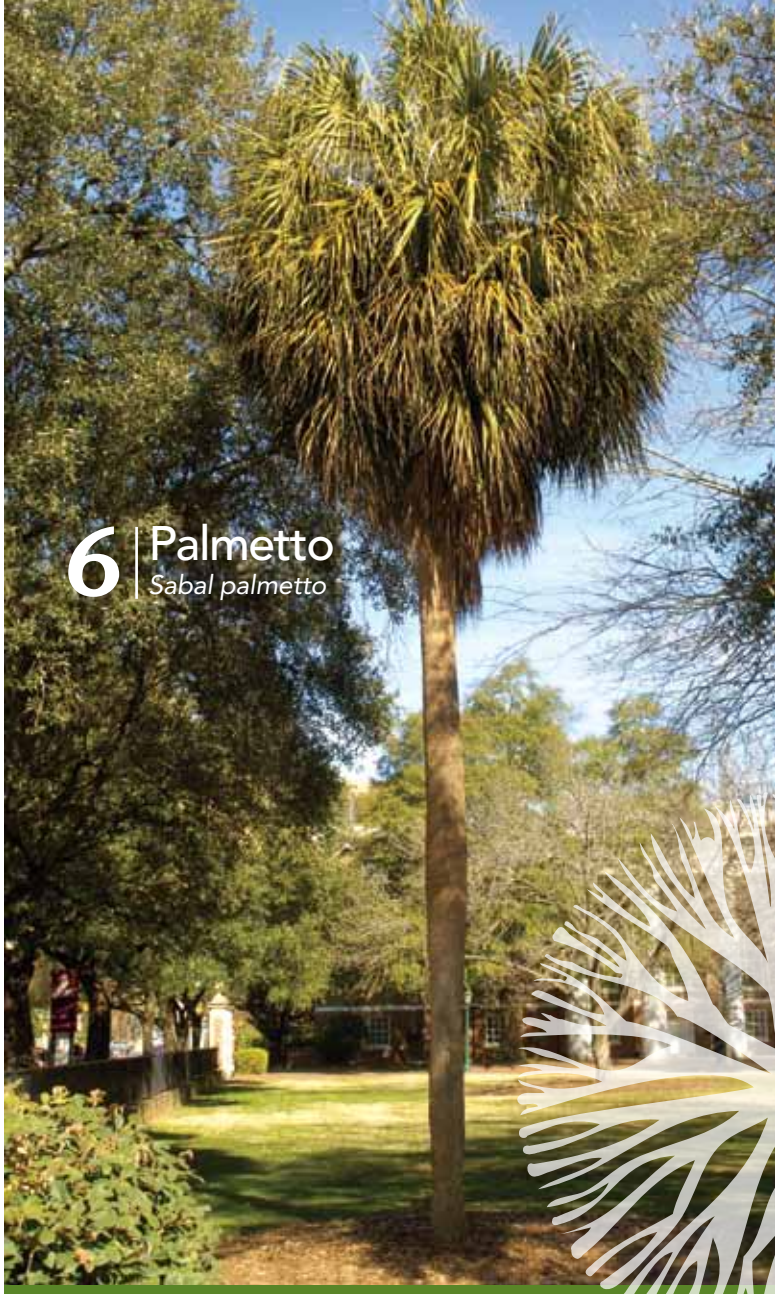
Developing an awareness and appreciation for trees is only one aspect of botany. At USC, botanical study is centered within its herbarium, which is a scientific collection of dried, pressed plant specimens. The herbarium was founded in 1907 by Dr. Andrew Charles Moore, the University professor for whom the herbarium was formally named in 1989, and is an indispensable resource for botanical knowledge through teaching, research, and public service.

Total holdings number more than 112,000 specimens, the largest collection of its kind in South Carolina. Researchers and visitors will find a diverse collection of vascular and nonvascular plant material, primarily from South Carolina and the Southeastern United States, but also including material from Japan, central Europe, and the South Pacific.

The herbarium Web site features an online plant atlas, including maps and images of all known plant species in the Palmetto State. The site also features a searchable database of the herbarium's collection. The A.C. Moore Herbarium is an outstanding modern reference collection for identifying local species, including weeds that have been recently introduced into South Carolina and uncommon or threatened species. Collections of the herbarium are an important research tool for scientists around the world. The herbarium is located in the Coker Life Sciences Building on Sumter Street.

The public is invited to make use of the herbarium's free plant identification service. Unknown or otherwise interesting plants (including weeds, houseplants, garden ornamentals, trees, shrubs, aquatic plants, etc.) can be mailed to the A.C. Moore Herbarium at the address below.

For more information on trees, and on plants in general, contact the herbarium at 803-777-8196, www.herbarium.org, or by mail to: A.C. Moore Herbarium, Department of Biological Sciences, University of South Carolina, Columbia, SC 29208.



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