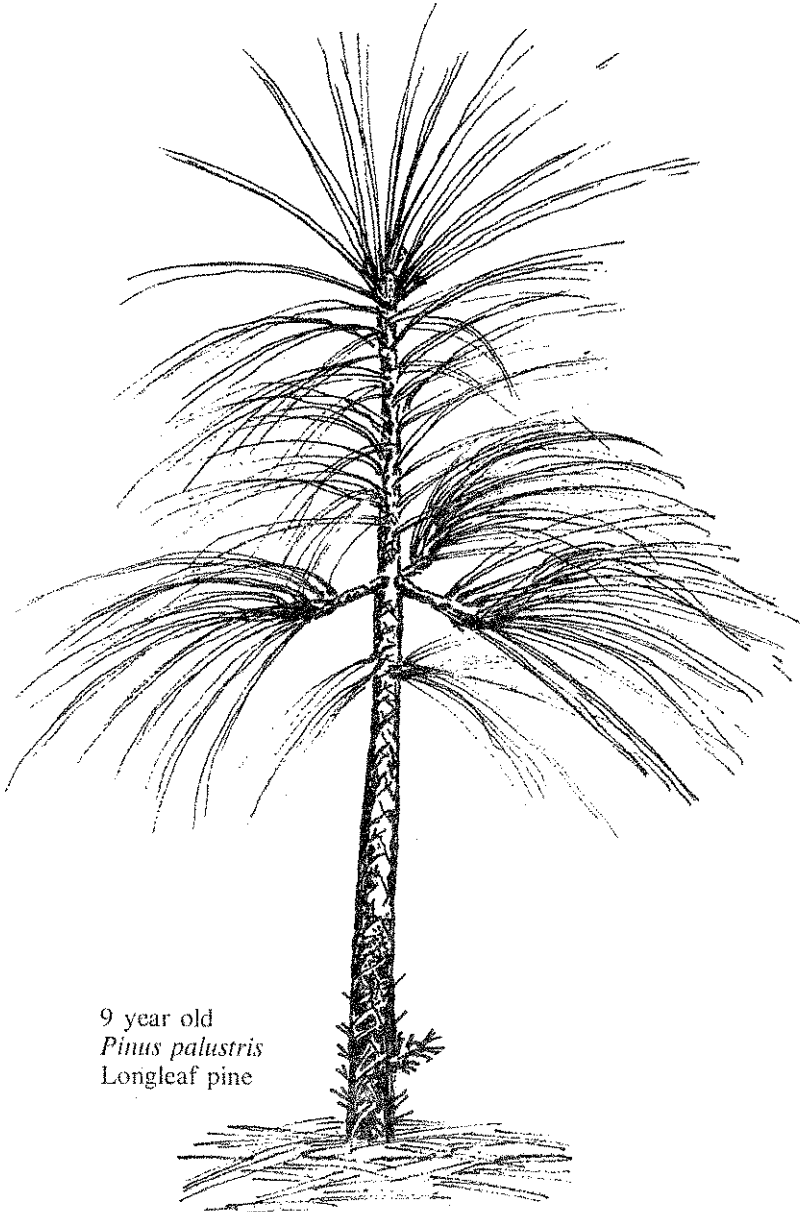


NORTH  
CAROLINA

*wild flower*

PRESERVATION  
SOCIETY, INC.



9 year old  
*Pinus palustris*  
Longleaf pine

SPRING 1991  
Volume III Number 1 NS

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PRESERVATION SOCIETY, INCORPORATED**

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**NEWSLETTER**  
**of**  
**North Carolina Wild Flower Preservation Society**

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**The Society's annual dues are due  
MAY 1.**

**Payments in advance and without further  
notice are MOST welcome and will save the  
expense of a mailed notice from the  
treasurer.**

*Cover is by Carol Miller, NCWFPS member and NC Botanical Garden volunteer. It is Pinus Palustris, long leaf pine, drawn from life: a nine year old tree in the Botanical Garden. Notice the remains of the early growth, "the fountain stage" at the base. This is the result of controlled burns to simulate natural conditions in our savannas.*

\*\*\*\*\*

**IMPORTANT NOTICE!**

**CHANGE OF SPRING MEETING DATES!**

The Spring Meeting was previously scheduled for April 20-21, 1991, as announced in the last Newsletter. Due to conflicts with the Southern Furniture Market and the Greater Greensboro Open Golf Tournament, we have rescheduled the Meeting for May 4-5, 1991.

**THE 1991 SPRING MEETING WILL BE HELD  
MAY 4-5 IN THE GREENSBORO AREA**

A wonderful agenda is being developed by Nell Lewis; full details will be provided in the meeting notice to be mailed in late March.

\*\*\*\*\*

**1991 CALENDAR OF EVENTS**

- May 4-5** *NCWFPS Spring Meeting*—Greensboro, NC (see notes by Nell Lewis)
- July 21-24** *Eastern Native Plant Alliance (ENPA) Annual Meeting* co-hosted by the Wild Flower Society and the NC Botanical Garden, Chapel Hill, NC (see article by Benson Kirkman)
- July 24-27** *Landscaping with Native Plants Conference*, Cullowhee, NC (send self-addressed, stamped envelope to NC Botanical Garden for brochure)
- Sept. 2** *Labor Day Open House* at the NC Botanical Garden
- Sept. 28-29** *NCWFPS Fall Meeting*—The Green Swamp, Brunswick County, NC

**NCWFPS PAST PRESIDENTS**

- 1951-52 Mrs. Herbert Smith, Liberty, NC
- 1952-54 Mr. J.A. Warren, Chapel Hill, NC
- 1954-56 Mrs. Paul Spencer, High Point, NC
- 1956-58 Mr. Lionel Melvin, Pleasant Garden, NC
- 1958-60 Mrs. Carl Pegg, Chapel Hill, NC
- 1960-62 Mr. Walter Braxton, Greensboro, NC
- 1962-66 Mr. Gordon Butler, Fayetteville, NC
- 1966-68 Dr. H.R. Totten, Chapel Hill, NC
- 1968-70 Dr. Herbert Hechenbleikner, Charlotte, NC
- 1970-72 Dr. Marjorie Newell, Winston-Salem, NC
- 1972-74 Mr. Tom Shinn, Leicester, NC
- 1974-76 Mrs. Pearson Stewart, Chapel Hill, NC
- 1976-78 Mr. Ken Moore, Chapel Hill, NC
- 1978-82 Mrs. O.G. Allen, Winston-Salem, NC
- 1982-84 Mr. Tom Howard, Youngsville, NC
- 1984-88 Dr. G. Ray Noggle, Raleigh, NC

*Past presidents are permanent advisors and members of the board of directors.*

## PRESIDENT'S MESSAGE

Many of you are aware of the proposal last year to sell the William B. Umstead State Park and the quick dismantling of that proposal. I hope most of you are also aware of the continued "attacks" on the Park through such projects as further expansion of the Raleigh-Durham Airport, and the current proposal to build the Duraleigh Connector Road on the east side of the Park. The road will encroach on the Park, split off NCSU's Schenck Memorial Forest and the adjoining environs, significantly damage the Park, the Forest, Richland Creek and Lake and their wetlands, and make unnecessary environmental sacrifices for the convenience of high-speed automobile travel. The Umstead Coalition is supporting a feasible alternative that will protect Umstead Park and minimize environmental impact.

Elsewhere in this Newsletter, an article by Frank Briden, co-chairman of the Umstead Coalition, presents a brief history of the Umstead Coalition and its ties to the old "Citizens to Save Umstead Park." That group was formed in 1968 to prevent airport expansion into the Park.

Currently, the Umstead Coalition consists of 15 conservation and recreation organizations and in interested individuals. The member organizations are: *B. W. Wells Association, Capital Group Sierra Club, Conservation Council of North Carolina, Eno River Association, Friends of State Parks, Headwaters Group Sierra Club, New Hope Audubon Society, North Carolina Herpetological Society, North Carolina Wildlife Society, North Carolina Wild Flower Preservation Society, Raleigh Ski and Outing Club, Research Triangle Group Sierra Club, Rockingham Naturalist's Club, Society for the Preservation of Jockey's Ridge, and Wake Audubon Society.* Together we represent over 10,000 environmentally aware citizens and have become a potent force in protecting and aiding the Park. Our strength is in our numbers.

Organization memberships are \$50.00, and individual memberships are \$5.00. Membership information can be obtained by sending a self-addressed stamped envelope to Dr. Bill Zielinski, co-chairman, at 5604 Plum Nearly Ct., Raleigh, NC 27610 (or to me). Funds from memberships and donations will be used to defray costs of printing and other expenses in our current struggle with the NC Department of Transportation. In addition, we will be sending out a Newsletter very shortly. Finally, funds will be used for legal expenses if we have to take NCDOT to court as a last resort. Any residual funds will be used for active support for the Park, including repairs and maintenance, trail clearing, and possibly even land acquisition to shore up buffers and boundaries.

I encourage all members to become actively involved in this and other State Park support groups (or help organize one for the park nearest you). Write letters to your local legislators supporting the protection of Umstead Park and all our parks and important natural resources.

  
Benson

*Note: In this message I take the liberty of departing the custom of writing directly about Society matters. I acknowledge that the Umstead Park situation has taken much of my attention lately.*

B.K.

## FALL MEETING — 1990

by Bob Tuggle

Approximately 535 million years ago forces deep within the earth pushed a body of molten rock near enough to the surface to cool. By the time the Preservation Society decided to visit the area several months ago, October 20, 1990, a lot of changes had taken place. A mountain range six miles high had been born and had since mostly eroded away. The Broad River had, during that process, coincided with a fault line in the underlying rocks: the path of least resistance in that area. This fault provides prime erodible surfaces. Our group came in during the latest stages of this erosion to explore portions of what is now called Hickory Nut Gorge.

From our lodgings near the Towns of Ruth and Rutherford, we drove Saturday morning through winding foothills and past alluvial meadows formed by this ongoing erosion of the great mountain range, where fields of pumpkins evidenced the farmers taking advantage of this geological deposition. We drove past Lake Lure, created in 1926 on the Broad River, primarily as a tourist attraction. Spectacular formations quickly came into view as Chimney Rock appeared, a stalwart example of the differential ravages of the elements.

Being formed of great pressures and a mixture of minerals and circumstances, Chimney Rock is an outstandingly different aspect of Hickory Nut Gorge. Henderson Augen Gneiss is the name given by geologists to the background material in this formation. The gneiss is comprised of a medium grain quartz/feldspar/hornblende/biotite aggregate with scattered muscovite and garnet intrusions. Augen, a term meaning eye, in this case refers to the large isolated feldspar crystals in the background rock. These were thought by someone to resemble Hickory Nuts, hence the name Hickory Nut Gorge.

Site specific erosion within relatively small areas is producing the interesting formations we see now. Devile Head, the Opera Box, Moonshiner's Cave, Exclamation Point, Inspiration Point and the famous Chimney are all products of differential erosion. We ate lunch at Hickory Nut Falls, over 400 feet high, produced where Fall Creek plunges over an area high in harder minerals such as hornblends and amphibolite. This site is relatively free of faults or weaknesses in the rock and affords some protection from erosion. The gorge below the falls erodes at a more rapid pace than the top, and will allow future Society members to experience a taller waterfall than what we now see.

Erosion plays another role here. The exposed rock faces and shallow soil layer coupled with the climate at a higher elevation provided us with lots of unusual plants. Twisted-Hair Spikemoss (*Selaginella tortipila*) presented itself in prominent clumps in almost every exposure. Biltmore Sedge (*Carex biltmoreana*) was in abundance on some of the rock faces and the seepages provided Deerhair Bulrush (*Scirpus cespitosus*).

Although not so rare as the preceding plants the Asters and Goldenrods provided spectacular displays. The common Downy Rattlesnake Plantain (*Goodyera pubescens*) and the less common and smaller Lesser Rattlesnake Plantain (*G. repens*) were growing side by side along a more wooded section of the Cliff Trail. A surprise was meeting what appeared to be Sea Oats but was actually Broad-Leaved Oats (*Uniola latifolia*) a close cousin. A multitude of other plants were

seen in the park, including Lobed Spleenwort, Wild Live-for-ever, Small-flowered Alumroot, and a White Blue-eyed Grass.

After a day packed with unusual plants and spectacular views everyone gathered in the restaurant atop Chimney Rock for an evening meal. We were treated to yet another breathtaking vista as the sun set in full color over Hickory Nut Gorge and Lake Lure. Elisabeth Feil, Chimney Rock Park Naturalist, our chief guide all day, enlightened the group with a slide lecture depicting the development of the Park.

Many thanks to the staff of Chimney Rock Park for making what could have been a dangerous undertaking very pleasant and educational.

Sunday morning we were again greeted by a good crowd and departed for Bat Cave. Bat Cave is a fissure cave located directly on the Broad River fault. Now protected by the Nature Conservancy and an imposing fence, access is allowed only with a guide and advance permission. A hike through a mature cove forest with Ms. Feil provided contrast to the walks the day before. Many plant species were encountered including Shining Club Moss, Bladdernut and Green Violets. We were guided over boulders and into one of the entrances to the caves. Due to the treacherous nature of caves in general and the equipment required, we were only allowed a brief glimpse of the system. Thank goodness.

*Bob Tuggle is one of our members from Danville, Virginia.*

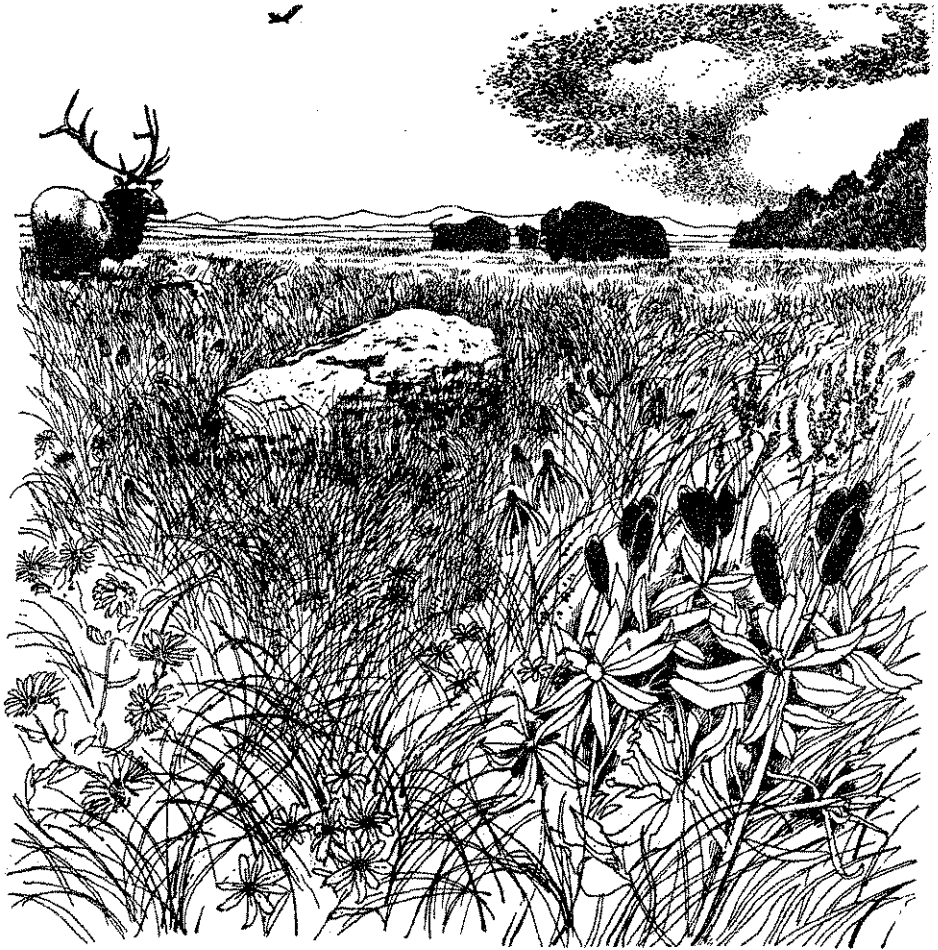
## WILDFLOWER CHOSEN PERENNIAL OF THE YEAR

A native American wildflower, creeping phlox (*Phlox stolonifera*), has been chosen perennial plant of the year by the Perennial Plant Association. The landscape plant is native from Georgia to Pennsylvania and hardy in all but the most extreme climates of the United States.

Creeping phlox is tolerant of shade and acidic soil and works well as a ground cover, as an underplanting with azaleas and rhododendrons, or under spring bulbs. The plants dislike limey soil or heavy clay, but are relatively trouble-free, even resisting the powdery mildew that plagues many phlox species.

The plant forms a rosette of shiny oval leaves then quickly sets out runners that root as they grow. Six-to-eight-inch flower stalks are covered with flat panicles of starlike flowers. *P. stolonifera* is available in a variety of pastel colors and a number of cultivars including: 'Bruce's White' (also called 'Alba' or 'Ariane'), 'Blue Ridge' (pale lavender), 'Sherwood Purple' (pale purple), 'Home Fires' (rose pink), 'Pink Ridge' (may be listed as 'Home Fires' or 'Melrose'), 'Osborne White' (white tinged with pale lavender), 'Iridescence' (lavender blue), and 'Daybreak' (light lilac).

For more information on the Perennial Plant Association write 3383 Schirtzinger Road, Columbus, Ohio 43206, or call (614) 771-8431.



### What The Piedmont Might Have Looked Like 200 Years Ago

*Illustration by Al Phillips*



Schweinitz's sunflower: Rarest of the Piedmont prairie flowers. Produces a bright yellow flower in late September.



Prairie Aster: Puts out a yellow flower. Is common in the Midwest.



Wild hyacinth: A lavender-flowered plant. Grows in wet glades once associated with prairies. Found in York County, S.C.



Gray-headed coneflower: Has a brown center surrounded by drooping yellow petals. Common in the Midwest.



## CHARLOTTE: WHERE THE BUFFALO ROAMED

by Jack Horan

*Buffalo shared the prairies with elk. From the surrounding forest, packs of wolves preyed on the grazing animals. Settlers often shot abundant black bear from the front doors of their cabins. Overhead, passenger pigeons flew by in flocks large enough to darken the skies.... But that was hundreds of years ago. Now the Piedmont's once-extensive prairie has ignominiously shrunk to a 100-foot-wide corridor, a power line right-of-way.*

When the early explorers trickled into the Piedmont nearly 300 years ago, they came across a landscape that looked like the Old West.

They saw hills covered with forests of huge trees, havens for pigeons and turkeys.

They saw clear-running rivers teeming with fish, beaver and otter.

They saw broad, grassy prairies, with clusters of white, yellow and blue wildflowers and browsing herds of buffalo.

Prairies? Buffalo? Thriving in the Piedmont of North Carolina and South Carolina?

It's hard to envision, but it's true. Even though most people associate grasslands with arid states like Oklahoma and Kansas, the primeval Piedmont embraced both forest and prairie.

Here's how one writer described the country.

"(The Piedmont) was not only a land of great forests, but also of wide prairies and vast canebrakes. When the first hunters came, large portions of it were treeless," wrote Douglas Brown, author of a 1953 book on the history of Rock Hill.

The prairies and canebrakes—a dense growth of cane often 20 to 30 feet high—held thousands of buffalo.

Historian John Logan described the herds in the upper part of South Carolina in the mid-1700s.

"The buffalo...roamed in large herds through the open woods and prairies, and found both pasture and concealment in the cane thickets of the rivers and creeks," Logan reported.

"At the earliest period of emigration into the upper country, an old pioneer from Virginia often counted a hundred buffaloes grazing on a single acre of ground in the present territory of Abbeville and Edgefield," Logan wrote in 1859.

The prairies belie the widely held notion that the Piedmont was covered by an unbroken forest that stretched from the Atlantic Ocean to the Appalachian mountains.

Rather, the region from Alabama to Virginia was a mosaic of dark-green forest, silvery rivers, light-green canebrakes and beige prairies.

One prairie lay between Charlotte and Rock Hill. Brown's book quotes a Fort Mill resident as saying part of the land between the Catawba River and Sugar Creek "was blackjack and then called prairie from its level, grassy and treeless appearance."

Blackjack refers to blackjack oak. The oaks invaded the prairies once buffalo

no longer grazed the land and periodic wildfires started by lightning and Indians were snuffed out.

The prairies were the centerpiece for a cornucopia of wildlife. Accounts by early explorers reveal the Piedmont was a lush Garden of Eden, nurturing a rich diversity of animals and birds on the scale of Yellowstone National Park or Alaska.

Buffalo shared the prairies with elk. From the surrounding forests, packs of wolves preyed on the grazing animals. The chestnut-and-oak forest held deer, turkey and panthers. Settlers often shot abundant black bear from the front doors of their cabins.

Overhead, passenger pigeons flew by in flocks large enough to darken the skies. The pigeons were easy to catch. "The Indians take a light, and go among them in the night," wrote explorer John Lawson when he passed east of Charlotte in 1701, "and bring away some thousands, killing them with long poles, as they roost in the trees."

### **Prairies No Longer Exist**

The passenger pigeon, once counted in the millions, is now extinct. The buffalo, elk, wolf and panther vanished from the Piedmont two centuries ago.

Over time, the prairies have been obliterated by farms and pastures, highways and subdivisions. Wildflowers like the prairie aster and the gray-headed coneflower have given way to cotton, soybeans and rose gardens.

Today, no Piedmont prairies exist. No one marked the date when the last acre of prairie succumbed to the suffocating, closing canopy of blackjack oaks or to the instant death and burial from a farmer's sharp-edged plow. Nobody set aside a prairie for future generations.

"It's really an ecosystem that's virtually extinct," said Alan Weakley, a botanist for the N.C. Natural Heritage Program, a state conservation agency.

Here and there, patches of prairie wildflowers still hang on.

The rarest is a sunflower that once tickled the bellies of grazing buffalo.

The plant, Schweinitz's sunflower, grows up to eight feet high and puts out a bright yellow flower in late September.

### **Protection For Sunflower**

Unlike some other Piedmont Prairie flowers that are common in the Midwest, Schweinitz's sunflower is found nowhere else in the world. It survives only on 15 scattered sites. Most are along roadsides in Cabarrus, Mecklenburg, Rowan, Stanly, Union and in York County, S.C.

Earlier this month, the sunflower was proposed for federal protection as an endangered species.

To help save it, Schweinitz's sunflower has been transplanted to a York County power line right-of-way to join a palette of other prairie wildflowers.

The right-of-way is the best surviving remnant of the prairie ecosystem in the Charlotte area, says ecologist John Nelson of Columbia.

Put another way, the area's once-extensive prairie, whose rolling vistas and herds of buffalo both awed pioneers and fed Indians, has ignominiously shrunk to a 100-foot-wide corridor of shrubs and steel towers. Nonetheless, Nelson said, "It's good we have this power line."

The scrubby right-of-way hardly looks like something a buffalo would want to call home.

It crosses S.C. 901, just south of the Rock Hill city limits. Just off the highway, discarded roofing shingles and empty beer bottles litter the ground. The wildflowers struggle against nonprairie plants like blackberry bushes and Queen Anne's lace for a place in the sun.

The right-of-way lies in the middle of 1,000 acres of "prairie" soil, a thin clay that favors grasses and flowers.

This kind of soil is found in North Carolina and 12 central and northern S.C. counties. In 1986 Nelson surveyed the area for plants for the S.C. Non-Game and Natural Heritage Section, South Carolina's state conservation agency. He now works as curator of the Moore Herbarium at the University of South Carolina.

Nelson and others have found a few surviving stands of flowers like prairie dock, ear-lobed foxglove and wild hyacinth in York and nearby counties.

The right-of-way, whose regular mowing simulates an open glade, holds the greatest number. To protect the wildflowers, the agency worked out a mowing agreement with Duke Power Co. in 1988. Duke mows the corridor only after the first frost to allow the plants to produce their seeds.

### Recreating a Prairie

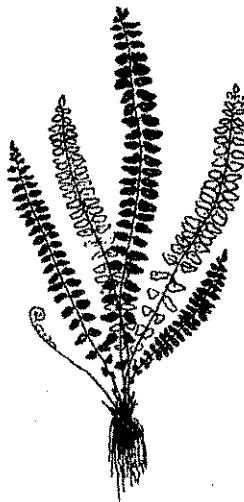
Both the Non-Game and Natural Heritage Section and the S.C. Nature Conservancy have tried to obtain land for a prairie preserve, but landowners so far have been unwilling to sell.

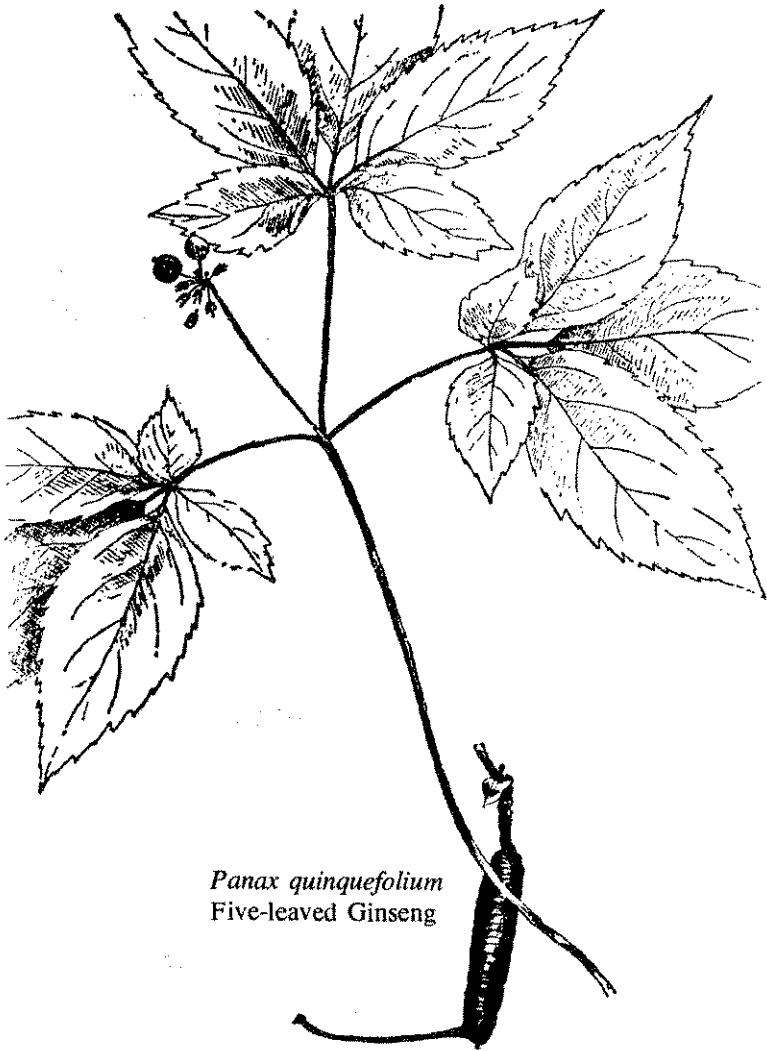
Some, like Dr. Richard Houk of Winthrop College, would like to see a small re-creation of the prairie so people can see what the Piedmont once was like.

"That's definitely a part of our heritage," said Houk, a professor of biology. "But most people aren't even aware of it."

*This article, reprinted with the permission of the Raleigh News and Observer, is by Jack Horan, a staff writer.*

*July 29, 1990*





*Panax quinquefolium*  
Five-leaved Ginseng

*Strange Relatives*  
**THE GINSENG FAMILY**  
*by Jane Steffey*

According to Chinese legend, ginseng was cultivated in heaven by the gods and brought to earth to help ease the suffering of mankind. At one time, only the emperor had the privilege of collecting this root, renowned for its fantastic powers of allaying fatigue, increasing mental capacities, prolonging life and dissolving tumors. For thousands of years the root of this herb was referred to in Oriental medicine as the "elixir of life" and the "herb that cures all." It has been credited with healing innumerable ailments, and, in some quarters, is considered both a rejuvenating antidote to impotence and a sexual stimulant.

The earliest complete Western description of Chinese ginseng can be found in an eleventh-century herbal. P. Jartoux, an eighteenth-century Jesuit missionary in China, was perhaps the first westerner to witness the gathering and use of ginseng in Manchuria. He was also the first to furnish a detailed description of the plant, which he published in transactions of the Royal Society of London in 1714. This communication created tremendous interest in the Western world and aroused speculation that the valuable root might be found elsewhere, particularly in areas of the world with a climate similar to that of Manchuria, such as Canada. Father Joseph Francis Latitau, a Jesuit missionary who worked with the Iroquois Indians in Canada, was also fascinated by the reports about ginseng. Lafitau observed the Indians' use of a remarkably similar root in the treatment of stomach disorders and as an aphrodisiac. After searching for several months, he discovered American ginseng near Montreal in 1716.

Linnaeus gave ginseng the name *Panax*, in reference to the plant's miraculous healing powers. *Panax* is derived from the Greek word *panakes*, meaning panacea. Best known of the species in this genus is *Panax pseudoginseng* (also called *P. ginseng* and *P. schinseng*). American ginseng is *P. quinquefolius*, a name assigned by Linnaeus in 1753.

The species of ginseng found in North America is only slightly different from the plant from the Far East. *P. quinquefolius* is native to shady slopes of ravines in hardwood forests from Quebec to Manitoba, and from Maine and Minnesota, southward to the mountains of Georgia, Arkansas and Louisiana.

*P. quinquefolius* is a fleshy-rooted perennial herb, 10 to 20 inches tall. Its stems bear a single whorl of palmately divided leaves with five leaflets. A solitary stalk bears an umbel of greenish-white flowers, followed in September by bright red fruit about the size and shape of wax beans, each containing two or three seeds. Birds, mice and chipmunks are fond of the seed.

Another species, *P. trifolius*, groundnut or dwarf ginseng, is found from Nova Scotia to Wisconsin and south to Georgia. It differs from *P. quinquefolius* in that it is smaller, has three leaflets, and produces yellow berries. It is not desirable commercially.

Samples of American ginseng root were sent to China for examination soon after the plant's discovery. Once the Chinese confirmed that the quality was satisfactory, the French in Canada began collecting ginseng from the Indians for export. Demand for ginseng grew so quickly that it became an important article of commerce in Montreal. Soon, American colonists became enthusiastic about collecting the roots. Gathering and marketing, which began on a small scale, picked up momentum when the extent of ginseng's range in the colonies became known, and the collection and sale of American ginseng became a highly profitable venture. Ginseng was first exported to China from the colonies in the mid-eighteenth century, by way of the East India Company in England. A shipload of 55 tons of ginseng sailed from Boston to China in 1773. In 1982, John Jacob Astor made the first direct shipment of American ginseng to China.

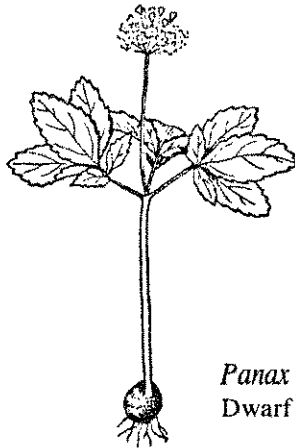
The supply of wild ginseng was much depleted during the nineteenth century because of the constant and heavy demand for the root by Chinese the world over. In addition, the plant's woodland habitat was greatly diminished by lumbering operations and by settlement.

Great quantities of ginseng roots were dug in the wild, without consideration

given to the age of the plants or for replacing them, and American ginseng nearly became extinct in the wild. Ultimately, cultivated plants grown in various parts of the country became available.

Under the Endangered Species Act of 1975, the status of ginseng was considered on a nationwide basis. Lawmakers decided that the overall situation was not grave enough to warrant federal listing of ginseng as a Threatened or Endangered Species. However, under the Convention of International Trade in Endangered Species (CITES), export of both wild and cultivated American ginseng is still regulated on an annual basis. Exporters must have a federal permit, as well as state documents that certify that the roots were legally harvested. Much of the American ginseng that is harvested is cultivated in shaded farms or wooded areas, then exported.

The U.S. Food and Drug Administration permits the import and marketing of Chinese ginseng roots and other ginseng products provided that no nutritional or therapeutic claims are made on the labels of the products. Ginseng tea, extracts, tablets and capsules imported from three countries—Korea, the USSR and China—are sold in some American drugstores and Oriental food stores as food, not as drugs.



*Panax trifolium*  
Dwarf Ginseng

Since 1950, the People's Republic of China has produced the root under government supervision. Chinese and Russian researchers report having isolated five ginseng chemicals that they believe act as stimulants, tranquilizers or painkillers. Russian studies also conclude that ginseng diminishes the harmful effects of radiation; Western scientists tend to refute such claims.

Ginseng and its relatives are members of the Araliaceae, the aralia or ginseng family, which consists of 84 genera of herbs, shrubs and trees that are distributed throughout the world in both temperate and tropical regions. The chief centers of distribution are India, Malaysia and tropical America. Various vegetative and floral characteristics—for example, simple or lobed leaves, and pinnately or palmately compound leaves—distinguish the most important genera. The juvenile forms of leaves and growth often differ markedly from the adult forms. When grown as ornamental pot plants, many different species remain in similar juvenile

stages and are difficult to identify. These features contribute to the horticultural interest and value of many species.

The plant stems of aralia family members are pithy, and frequently bear spines or prickles. Leaves are usually alternate, and are often large and variously compound. Hairs on the leaves are distinguishing features of some species. In species of climbing habit, aerial roots on the stems enable the plant to cling to supporting structures. Some leaves and roots are aromatic.

Small, greenish or whitish flowers are arranged in clusters. In some instances, the sexes are on separate plants. Generally, there are five to 10 petals; occasionally, there are four. The petals are free or partially fused. There are from five to many stamens. The fruit is a drupe.

Thirty species of herbs, shrubs and trees in the ginseng family are botanically classified in the genus *Aralia*. Several of these are nearly or fully hardy in USDA Zone 5, including such woody plants as Hercules'-club, Japanese angelica tree and Chinese angelica tree.

*Aralia spinosa*, Hercules'-club or devil's-walking stick, is a clump-forming North American shrub or tree that grows to 30 feet or more. It is thickly armed with stout spines. The two common names allude to the vicious spine-covered clubs or canes that can be fashioned from the stem or trunk. The bark of *A. spinosa* has been used for medicinal purposes. Hercules'-club is hardly a species you would think of planting as an ornamental, but the great inflorescences of creamy-white flowers the plant produces in July give it an almost exotic beauty. It is even more ornamental in the fall, when berry-like fruits of crimson or reddish-purple hues cover the plant. The suckering habit of this species may be a detraction in the garden, but *A. spinosa* can make a majestic addition to a mass of lower-growing shrubs, or can serve as an effective barrier plant.

The angelica trees—*A. chinensis* from China and *A. elata* from Japan, Korea and Manchuria—are also prickly trees. They are very handsome, with large, hairy flower clusters and large foliage. Some of the more ornamental cultivars of the two angelica trees (there are several variegated ones, for example) are more commonly grown than the species.

*Aralia cordata* is a spineless, perennial herb that grows about nine feet tall. Commonly called udo, it is grown on many truck farms in Japan. Its brilliant white, crisp, fiberless shoots have a slight turpentine flavor, suggestive of pine. The young shoots are peeled, cut into shavings and soaked for an hour in ice water in preparation for use as a salad green. Udo is also cooked somewhat as is asparagus. It is ready for eating extremely early in the spring. This hardy herb is not commonly grown in the United States.

Herbaceous wild relatives of udo in the United States are wild sarsaparilla and the spikenards. *A. nudicaulis*, wild sarsaparilla, produces one long-stalked compound leaf and a naked flower stalk that arises from the underground stem. The flower stalk has three clusters of greenish flowers, which are followed by purplish-black berries. The creeping, aromatic rootstock is used in homemade root beer, and was once used medicinally as a stimulant and diuretic. Udo roots have also been used in this way. The name sarsaparilla comes from the Spanish *zarza*, meaning bramble, and *parrilla*, or little vine.

The two spikenards—*A. racemosa* and *A. californica*—differ in leaf size and in the number of flowers to a cluster. Berries of *A. racemosa* are used to make

jelly; the plant's aromatic root is used medicinally or as an ingredient in homemade root beer. The name spikenard alludes to a fragrant ointment, mentioned in the Bible, that has become associated with this *Aralia* species in modern times.

Most of the plants florists call "aralia" belong to another genus of the ginseng family, *Polyscias*. *Polyscias* species are trees from Africa, India and the Pacific Islands, and range in height from eight to 25 feet. In the North, these plants are grown as greenhouse foliage plants, and usually reach three to six feet in height. In the tropics and subtropics, they are used outdoors as hedges and for other landscape uses. There are about 80 species; cultivated species and their numerous cultivars appear under such familiar names as Balfour aralia, fern-leaf aralia, ming aralia and geranium-leaf aralia. Generally, these plants are spineless, and are known for their fine foliage. The aromatic, compound leaves vary from species to species in size, shape and color; some are plain green, while others are variegated with white and cream mottling or margins. Flowers are rarely produced on cultivated plants. The name *Polyscias* is from the Greek words for "many" and "shade," in reference to the abundant foliage and the shade provided by the foliage.

False aralia, *Dizygotheca elegantissima*, is a straight-stemmed, willowy plant that is frequently used in interior landscaping and as a house plant. There are about 15 species in the genus, all of which are spineless shrubs or small trees. When used as an indoor tree, false aralia attains a height of three to six feet. It retains its juvenile characteristics—finely divided, red-brown leaflets that are wavy-edged and slightly lobed—under these conditions. The whorled leaves are borne at the ends of long stems.

Ivy, the climbing evergreen that can be identified by even the least knowledgeable observer of the landscape, is also a member of the ginseng family. *Hedera* is the scientific name for ivy; the word ivy is derived from the Greek *iphyon*.

Ivies are evergreen woody plants that have both juvenile and adult foliage forms. In the juvenile forms, leaves are palmately lobed. Flexuous stems produce aerial roots, which the vine uses to cling to any available support. The vine does not flower in its juvenile state. Ivies become shrub-like or tree-like at maturity. In the adult stage they have stiff, non-climbing, rootless stems, and the leaves are elliptical or ovate, not lobed. At this stage, ivy produces clusters of small, greenish flowers on bushy branches; rooted cuttings of this adult form produce an erect shrub, not a vine. The fruit of ivy is a small, poisonous, black berry.

Chief among the five species of *Hedera* are *H. canariensis*, Algerian or Canary Island ivy, which is much cultivated in the subtropics; *H. colchica*, Persian or Colchis ivy, which is native to regions south of the Caspian Sea, and has large, heart-shaped, dull green leaves that produce a resinous odor when crushed; and *Hedera helix*, English ivy, a woody vine native to Europe, North Africa and western Asia that is cultivated in temperate zones of the world.

Most cultivated ivies are *H. helix*. It is the most variable of all hederas, and many cultivars have arisen. Juvenile shoots mutate freely, giving rise to various foliage forms and growth habits. Such mutations are unstable and frequently revert to the original form with age. *H. helix* is now much more than a ground cover or wall drapery; ivy specialists and hobbyists have produced over 100 cultivars by propagating choice mutants.





flowered Bloodroot. As everyone knows, it is useless to pick the flowers of the common Bloodroot, because they drop their petals within a few hours. The flowers of var. *multiplex*—when picked as they begin to open—last for several days in a vase.

Mr. von Webern gave plants also to the Arnold Arboretum, from which Wilson described the var. *multiplex*. I do not know, whether he gave plants also to others and, if so, to whom. I have distributed the var. *multiplex* rather freely, even sending plants twice to England and twice to Germany. I believe that most people, who do have it now, have received it through me, directly or indirectly.

*Trillium grandiflorum* var. *plenum* Hort. was discovered by Mr. W.A. Smith in an isolated piece of woodland not far from Rochester, New York. The species itself is the spring glory of the woods of northeastern North America, often occurring in large colonies of hundreds of plants which, in flower, may color the whole floor of the woods white. But, when one examines the flowers in detail, it will be found that they are all very much alike, with only minor differences in the size and shape of the petals. In some plants, the aging flowers may be more brightly pink than in others, but that, usually, is all. The only place known

to me, where *Trillium grandiflorum* actually mutates widely, is the woodland discovered by Mr. W.A. Smith. There, one may find plants with green-striped or entirely green flowers, others which have two whorls of leaves, or some which have more than the normal number of petals. Nobody knows why.

There is a possibility that the soil in this place contains some radioactive mineral, such as thorium, rubidium or actinium, which are rather frequently present in very small amounts. In decay, they emit alpha and beta rays, and it is just possible that one of these may be present in sufficiently large amounts to cause plant mutations. But, there is no proof.

At any rate, it was in these woods that Mr. W.A. Smith found a plant of *Trillium grandiflorum* with a flower which was so fully double that it resembled the double-flowered form of *Gardenia jasminoides*. He wrote a short article about it in a magazine, which I saw and which I found so interesting that I wrote him, asking whether it would be possible for me to get an offset of this plant. His answer was that he had only one plant and he did not know how to propagate it. He said, he had had this plant for almost ten years but, every year, it produced only one new tuber and one flower. He was rather tired of it and would be glad to give it to me. Of course, I accepted and when the plant arrived, I planted it in the shade garden of our nursery.

What happened now, looked like a miracle. After two years, we discovered that five additional small plants surrounded the old plant which now, suddenly, had produced extra off-sets. When these were removed, in fall, and planted separately, they quickly developed into strong plants and flowered. Soon, we had well over 20 of them and this group was a wonderful sight in spring.

The only possible reason for this strange behavior can have been the change in soil, which in this case was to a fairly heavy, slightly alkaline clay soil. Unfortunately I do not know what the original soil was. Whether, possibly, some additional substance is present and had an influence, remains a mystery.

### Treatment in cultivation

Trilliums, when planted in the garden, are often disappointing by failing to thrive. For this, there are several reasons, First of all, they can be transplanted safely only in fall—end of August or early September—not in spring, when they are in flower. Secondly, they do not like a sandy or pronouncedly acid soil. This applies also to *Sanguinaria*. But, there is still another factor which frequently causes trouble. The average gardener, when moving woodland plants to the garden, is almost sure to add peatmoss to the soil in order to improve its texture. This would be a serious error, especially as far as *Trillium* is concerned, because peatmoss acts like a poison to it. Only leafmold—still containing dead leaves—should be added. I know this for a fact, but I have never made a study of what peatmoss actually does in the soil, besides possibly causing a change in the degree of soil acidity. The chances are that it interferes with the availability of calcium which *Trillium* in particular seems to need.

When trying to establish woodland plants in the garden, one should remember also that, in fall, they should be covered slightly (not too thickly) with dead leaves. In spring, the leaves should not be removed but should be worked loosely in the surface soil. They do not serve as a protection but as food, and woodland plants do need them. They will not live long without them.

*By permission of the American Horticultural Society.*

of our concrete jungles, and then we live in anticipation of the vacations we will take to get away from them. We are, indeed, the ultimate paradox!"

K.J.'s parting shot is magnificent:

"I don't presume to have all the answers, and I don't think that any one person can solve all our ecological problems. But, if each of us can think of just one everyday item to recycle, and we each get one friend to do the same, and each friend finds one other friend—like a giant, living chain letter—it might catch on. It might cause a ripple. Hell, think big—it might save our world!"

I wish I could be president for one day and appoint K.J. secretary for the United States Department of the Interior. Wouldn't it be great to have her voice on a national platform?

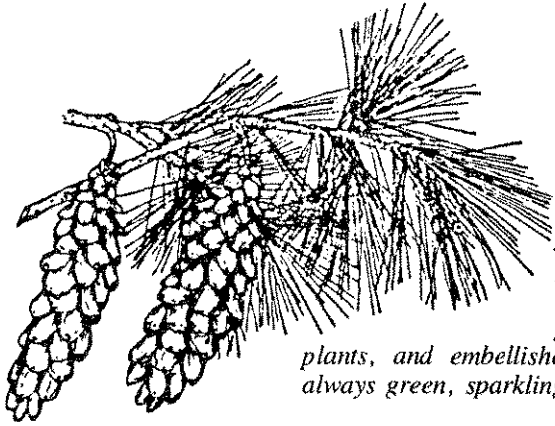
*This article was sent by Marge Brown, a member of the Alabama Wildflower Society, who is active in roadside planting of native wildflowers.*

Ed.



## THE ENDANGERED LONGLEAF PINE FOREST OF THE SOUTHEAST

by Julie Moore and Merrill Lynch



"We find ourselves on the entrance of a vast plain which extends west sixty or seventy miles.... This plain is mostly a forest of the great long-leaved pine, the earth covered with grass, interspersed with an infinite variety of herbaceous plants, and embellished with extensive savannas, always green, sparkling with ponds of water...."

—William Bartram, Travels through North and South Carolina, etc. (1791)

Once stretching almost unbroken across the landscape of the southeastern United States from Virginia to Texas, the longleaf pine forest originally encompassed an estimated 60-70 million acres, or about 60% of the upland area of the coastal plain. Longleaf pine associations were the dominant upland vegetation of the southeastern coastal plain, and formed the matrix in which other forest communities were imbedded.

The longleaf pine (*Pinus palustris*) and fire are the common denominators of natural communities ranging from wet pine flatwoods and savannas to dry sandhills. Longleaf pine-dominated forests encompass a variety of soil types, moisture regimes, geological formations, and topographic features across the wide geographic range of the species. The open, park-like stands characteristic of the species, aptly termed "savannas," greeted the first white settlers upon their arrival. This characteristic structure was due to periodic natural (lightning-ignited) fires supplemented by fires set by Indians to drive game and to improve wildlife habitat.

The seemingly endless longleaf pine forests shaped the recent culture of the Southeast. Longleaf pine is rich in a gummy resin that produces tar, pitch, turpentine, and rosin. Called naval stores, these longleaf products were sought worldwide for a multitude of uses. Early economies of the Southeast centered on the export of these longleaf pine products. Heavy exploitation of the virgin longleaf pine timber began on the Atlantic seaboard after the Revolutionary War and moved westward, intensifying with the development of railroads in the late 1800's. The heyday of the longleaf pine timber industry was reached in the first decade of the 20th Century. By 1930 virtually all of the virgin longleaf pine forests had been cut.

Today the longleaf pine ecosystem covers less than 4 million acres. Most of this acreage is second-growth and degraded by logging, turpentinizing, grazing, and disruption of the natural fire regime. Longleaf forests have been partly or wholly replaced on many of the original sites by other pines and hardwoods due to suppression of fire.

### Biological Significance

The longleaf pine ecosystem was the most extensive upland ecosystem in the Southeast, covering a portion of nine states. Although dominated by a single canopy tree species, the diversity of groundcover plants is extraordinarily high. For example, longleaf pine savannas often have in excess of 30 species per square meter, making these communities the richest in North America. The environmental diversity of the coastal plain landscape coupled with the warm, moist climate of the region accounts for the high number of endemic plants and animals which have evolved in this fire-maintained system.

Many animals have also coevolved with the longleaf pine ecosystem, and are threatened by its decline. Two of the best known are the Red-cockaded Woodpecker and the Gopher Tortoise. The Gopher Tortoise is a keystone species, with over 80 species of commensal invertebrates and vertebrates using its burrows.

All aspects of the longleaf pine landscape are directly tied to fire. The pine itself is highly adapted to surviving frequent fire, and actually contributes to the high incidence of fires through its high flammability, a consequence of volatile oils and resins in its needles. Wiregrass (*Aristida stricta*), the most common associate in longleaf communities, also has a life history dependent on fire. Like many herbaceous plants of the longleaf forests, it normally flowers only after summer fires and produces highly flammable stems. Numerous studies point out that fire suppression results in the invasion of hardwoods and other fire intolerant pines, which gradually shade out the understory and eliminate many of the endemic plants and animals.

### Threats

Although the exact acreage of natural longleaf pine forest is not known, it is clear that the ecosystem has suffered dramatic declines in extent. The prognosis is bleak; every year more and more longleaf acreage is cleared for agriculture, suburban and urban development. Thousands of acres are clearcut, site-prepared, and converted to pine plantations. Almost all stands owned by industrial forest corporations have been or are being converted to intensively managed short-rotation plantations. With the exception of a few hunting preserves, most privately-owned stands have been cut over and left unmanaged. This has resulted in thousands of acres of prime longleaf land changing to dense scrub oak forests.

The National Forests of the South contain about 700,000 acres of longleaf pine. Although "multiple use" is the stated management, intense pressure to generate more income from the forests is causing thousands of acres of native longleaf to be converted to slash and loblolly pine monocultures. The longleaf pine acreage on Florida's national forests, for example, has been reduced by a third since 1963. Instead of saving the remaining longleaf habitat, national forest management is further endangering it.

Like the tallgrass prairie of the Midwest, the longleaf pine forest of the Southeast is a fire-dependent, species-rich ecosystem which formerly dominated the landscape but has suffered severe decline and fragmentation. For both ecosystems, acquisition and active management are required to protect remaining examples. The decline in longleaf pine has not been so precipitous as that of the prairie, but time is growing short to protect substantial and manageable acreages of this important ecosystem.

**SANGUINARIA CANADENSIS MULTIPLEX AND  
TRILLIUM GRANDIFLORUM PLENUM**

by Henry Teuscher

So-called "double" flowers are by no means always pretty, but there can be no doubt that these two are indeed outstandingly handsome. That they are superior forms of two of our most common native spring flowers, adds special interest. They deserve to be better known, to which I wish to contribute by relating their rather interesting history. I feel that this should be recorded.

*Sanguinaria canadensis* var. *multiplex* was named by E.H. Wilson in 1923 (Gardener's Chronicle, page 283). I described it in the German Magazine "Gartenschonheit" (June 1927). It was discovered by Mr. L. von Webern who was a rather remarkable person, with many interests, as well as somewhat of an eccentric. He was an engineer and was employed by a large engineering company at Dayton, Ohio, where he served mainly as a trouble-shooter. When anything went wrong in the construction of new machinery, he was called upon. When he went into action, he worked furiously day and night through, hardly eating or sleeping, until he found the source of the trouble and had corrected it.

After any such mad exercise he disappeared, and nobody knew where he was, until he returned. This was tolerated because he had no equal in his work. Few knew that he was a great lover of nature. He had bought a piece of wild woodland in Michigan, where he had built himself a cabin, and to this he retired, when he felt in need of peace and quiet to regain mental and physical equilibrium. He lived there like a hermit, sometimes for several weeks.

At that time, I was the botanist of the newly established Morton Arboretum at Lisle, Illinois, and von Webern often came there for information on native plants. We liked each other and became good friends.

One fine spring morning, Mr. von Webern was walking from his cabin to the spring, to get water for his morning coffee, when he saw—close to the path—a plant of the Bloodroot with ten large, double flowers. This was so beautiful that—being a very emotional man—he sat down and cried. When he recovered, he decided to go immediately to me and to tell me about it. I also became excited at this rare and wonderful find, never having heard of a double Bloodroot before, and I told him to mark this plant right away by placing a number of sticks around it, so that he could find it again in the fall. Toward the end of August or early September, he should dig up the plant and divide it. It has a fleshy rhizome which can be cut into inch long (2½ cm long) pieces. These pieces must be dipped into powdered charcoal—to stop the bleeding and to prevent rotting—and should be replanted right away, in a horizontal position and shallowly, in loose leafmold, covering the place lightly with dead leaves. They would sprout in spring and develop into new plants. He did this very successfully, and he also gave several pieces to me. I planted them in my garden and, when later I left the Morton Arboretum to go to New York, I took them with me. Eventually, I brought them with me to Montreal.

At Montreal, the plants quickly increased in size, forming large patches which every spring presented a beautiful display. The flowers, which have a diameter of somewhat over 6 cm, are sterile, because the stamens, as well as the pistils are transformed into petals, and they last much longer than those of the single-

English ivy is hardy, even in many parts of Zone 5. Moreover, ivy is an almost perfect foliage house plant. The wealth of varieties of foliage has attracted many admirers and collectors.

An ages-old panacea, historic commercial ventures, and ornamentation of modern gardens are all seen in a review of the ginseng family. All of these plants contribute to the leafy greenness of our planet and to the cycle of life on it.

*The American Horticultural Society has given us permission to use this article from THE AMERICAN HORTICULTURIST by Jane Steffey, a recently retired staff advisor.*

### WILDFLOWER GROWS BETTER WITH A FRIEND

The brilliant scarlet Indian paintbrush roams throughout the West with other wildflowers and grasses, and thanks to research at the National Wildflower Research Center, this striking native may become a beloved garden plant as well.

Current knowledge of the best propagation methods and seed harvesting techniques is minimal so that Indian paintbrush seed sources are limited and their prices high (about \$500 per pound of seed). The center's research on an annual variety, *Castilleja indivisa*, shows that the plant is a parasite. Since it draws water and possibly nutrients from plants around it, seed sown with that of another plant produces larger and healthier plants, which in turn yield more seed.

Research was conducted by Elinor Crank, a research horticulturist with the wildflower center, who first planted 100 Indian paintbrush seedlings with 100 Texas bluebonnet (*Lupinus texensis*) seedlings in four-inch pots. The same size pots were also used to grow 100 Indian paintbrush seedlings planted alone.

After three months Crank compared the height and weight of the plants in each group. The Indian paintbrushes grown with the Texas bluebonnets grew to an average of eight inches tall while the lone plants only reached three inches. Likewise, the first group weighed in at eight grams per stem while those grown without the Texas bluebonnets averaged less than a gram.

Similar studies have been conducted with several perennial species of Indian paintbrush with corresponding results, but the wildflower center is one of the first to study this annual species. If the preliminary findings are accurate, Indian paintbrush seed will become more readily available and affordable and easier to grow.

This is part of a two-year study that also will look at the plant's seed germination requirements and include field work on seed production per plant per acre. The research is funded by the Agricultural Diversification Program of the Texas Department of Agriculture.

Write or call the National Wildflower Research Center at 2600 FM 973 N., Austin, Texas 78725, (512) 929-3600.

## SHARING VIEWS OF ORIGINAL AMERICAN

*by Duque Wilson*

A famous humorist of American Indian descent, Will Rogers, once remarked, "My forefathers didn't come over on the Mayflower, but they met the boat."

Occasionally, I am privileged to have an original American in one of my classes whose ancestors also, "...met the boat."

Karen Joyce Cooke, or K.J., as she prefers to be called, a Cherokee American, has enrolled in several of my classes. I always learn more from K.J. than I teach.

She has given me permission to share some of her quotes with my readers. K.J. does not protest as much as she is piqued by the way European settlers and their descendants enjoyed and continue to enjoy raping America.

May I quote her elliptically, but exactly, on her appeal for Americans to live in harmony with nature?

"These bold settlers, in the blink of a geological eye, cut a swathe from sea to shining sea, leaving in their wake fallen forests, polluted waters, and slaughtered animals, not to mention homeless, hungry, and bitter natives. In less than 400 years, we humans have managed to eradicate various species of flora and fauna from the wild and have brought about the extinction of several human cultures. We call it progress, but what are we progressing toward?

"In the aftermath of all this destruction, the pendulum is swinging to the other extreme. It is now chic to be a vegetarian, to wear clothing that does not come from animals, to quit smoking in an attempt to improve air pollution, to use ground cover to "reclaim" mountains cut away by strip mining as a stop-gap for erosion—the list goes on. Are these quick-fixes the answer? Perhaps, but I don't think so.

"If every smoker in the world were to quit, lay down his tobacco right this minute, would there be an appreciable improvement in global air quality in the next week, the next month, the next year? No! If, for the next six months, every automobile on earth were left where it sits at this moment, would we see an improvement in world-wide air quality? Absolutely! But will we do it? The thought is absurd!

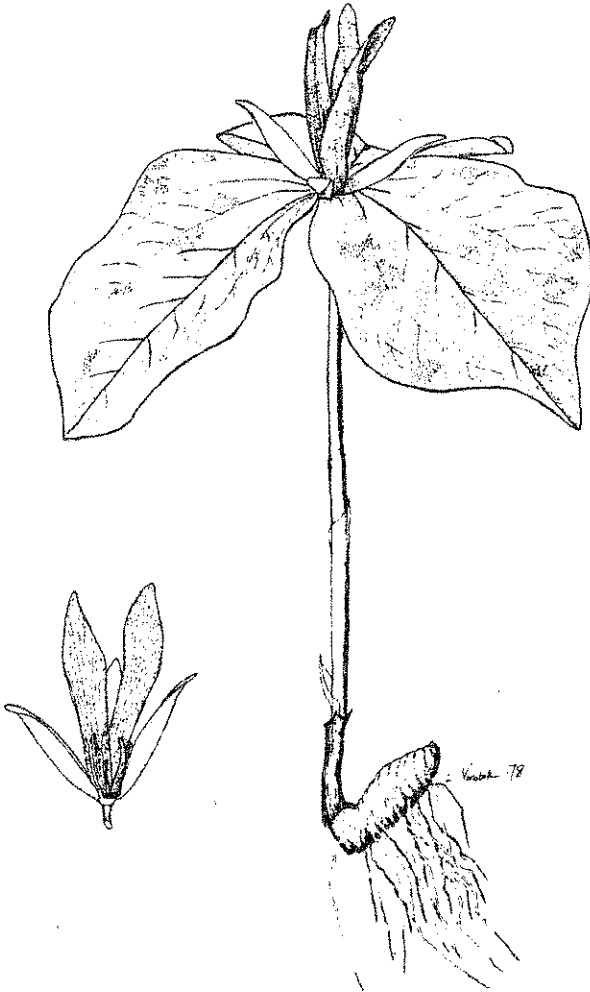
"The answers don't lie in the quick-fix extremes; they lie in careful, calculated management of our remaining resources. We don't need to completely stop eating flesh or wearing animal hides or never cut down another tree. We need to stop using indiscriminately and quit wasting that which can be used. Nature is the mother of recycling, and all the blueprints for success are, and always have been, right under our noses. But, we have to read and follow them!

"We are the richest society on earth. We throw away more than most other people ever have. We clear our lots down to sub-soil to build our homes; then we turn around and haul in top soil, roll down sod, and replant seedlings to make it worth looking at again. Sounds pretty stupid if you think about it. We leave our grass clippings, tree limbs, pine needles, and raked leaves in plastic bags at curbside, to be hauled to the dump; then, we go out and spend hundreds of dollars for fertilizer and mulch. Sheer genius! We kill bats, snakes, spiders and various other creatures of the repulsive variety and destroy their habitats; then, we buy our insecticides and bug zappers to rid our lives of pesky bugs. Many of us spend up to 18 hours a day earning money to build fabulous homes in the midst



## HOW GOOD ARE YOUR EYES?

The skill of close observation is one of the art aptitudes. Have you noticed, in the wild, how much variation there is in the appearance of plants of the same species? Tell us about your find and stake off the area to protect and mark it so that you can go back and see if the difference is permanent. I have some plants I want to tell you about when we get this feature going: a double bloodroot with narrow petals which, apparently, is not sterile; a double Dutchman's breeches; and a Christmas fern which has spores on its leaves all the way down to the stem. We could have a **DISTINGUISHED PLANT DEPARTMENT**. *Ed.*



1991  
NORTH CAROLINA  
WILDFLOWER  
OF  
THE YEAR



Coreopsis  
*Coreopsis auriculata*

*A conservation project of  
The Garden Club of North Carolina, Inc.  
and  
The North Carolina Botanical Garden*

## 1991 NORTH CAROLINA WILDFLOWER OF THE YEAR *Coreopsis (Coreopsis auriculata)*

The North Carolina Botanical Garden and the Garden Club of North Carolina, Inc. are co-sponsoring the North Carolina Wildflower of the Year Project for the tenth consecutive year. The project's aim is to actively promote throughout the state and region an attractive North Carolina wildflower. *Coreopsis (Coreopsis auriculata)* has been selected as the North Carolina Wildflower of the Year for 1991. Members of more than 580 garden clubs and other enthusiastic gardeners throughout North Carolina will be promoting this fine native perennial for cultivation in home gardens and landscapes in 1991.

For more information on coreopsis and for additional coreopsis seed for special projects, please send your request with a self-addressed, business-size, stamped envelope to: 1991 North Carolina Wildflower of the Year, North Carolina Botanical Garden, The University of North Carolina at Chapel Hill, Box 3375, Totten Center, Chapel Hill, NC 27599-3375, (Phone 919-962-0522)

### *Coreopsis (Coreopsis auriculata)*

Hardy and low-growing, coreopsis occurs in rich woodlands and thickets throughout the southeastern United States. In the garden this plant performs equally well in either full sun or light shade and requires little if any maintenance, except for an occasional watering during summer dry periods.

Plants spread and form colonies via stolons, or runners, which terminate in leafy rosettes. Some of these leaves are auriculate, or lobed at the base.

The flowering heads are 1½-2 inches in diameter with yellow ray flowers that are toothed along their outer margins. Plants begin blooming in late April and continue through most of May.

This coreopsis is unique in its size. It is essentially a dwarf, only 6-24 inches tall. Its slowly spreading habit and attractive foliage which persists through most of the winter make it a valuable addition to every garden.

### How to Propagate

1. Store this package of coreopsis seeds in an airtight screwtop jar in the refrigerator until you are ready to sow them.
2. Sow seeds in a plastic pot filled with a commercial seed starting mix. The best time to sow is late spring or early summer. Barely cover the seeds with seed starting mix. Place the pot of sown seeds in a warm spot that receives bright indirect light. Protect from rain and direct sunlight.
3. Water by placing the entire pot in a shallow tray of water. When the surface of the medium is moist, remove the pot from the watering tray and allow to drain. Always water the pot of seeds/seedlings by this method. Germination should occur between 20 and 30 days.
4. Check your pot of seeds daily to see if it needs watering. Neither allow it to completely dry out, nor keep it constantly soggy. This early stage is the most critical in the life of any plant.
5. Transplant seedlings into separate pots when they are large enough to handle, usually after they have developed 2 or 3 pairs of true leaves. As an alternative, the seedlings can be transplanted directly to a prepared seedling bed outside. In either case, move them to permanent locations in your garden once they

are large enough to fend for themselves, usually when a rosette of leaves has developed.

The seedlings greatly benefit from routine applications of a water soluble fertilizer applied at  $\frac{1}{4}$ - $\frac{1}{2}$  recommended strength during the active growing season.

If you have questions about growing coreopsis, please feel free to contact the North Carolina Botanical Garden for assistance. Good growing!

### **Fruit and Seed**

The ray flowers turn dark brown after the bloom period and remain attached to the head during seed development. The oval seeds are small, smooth, dark brown or black, and are slightly concave.

Seeds are mature and ready for harvest approximately four weeks after the flowers wither. Watch the inner series of bracts; when they begin to darken, it is time to collect. At this stage the bracts begin to spread, the seed head "opens" a bit, and the seeds are dispersed in the next few days. Clean the seeds with a sieve, or blow away the chaff. Store the seeds dry in a sealed, labeled container and refrigerate until sowing. Stored correctly, the seeds have a "shelf life" of approximately three years.

### **Cultivation and Uses in the Garden**

Flower production will be nearly as prolific in a lightly shaded setting as it will in direct sunlight. Plants are not unduly specific as to soil requirements, although they seem to spread faster in a well-drained soil amended with some compost or rotted leaves. Remove faded flowers after the bloom period, but save a few of the seeds for next year.

Plant this dwarf coreopsis in groups in the front of the sunny border. They also make excellent filler material in and among other low-growing plants. Use coreopsis as an edging plant along a sunny walk or lightly shaded path.

Plants also work well in the woodland wildflower garden where the golden yellow flowers are conspicuous in lightly shaded settings. So versatile is this coreopsis that it may be interplanted with dry roadside species such as butterfly weed, and sundrops, or with shade-loving plants such as bloodroot, columbine, and deciduous wild ginger.

### **The Garden Club of North Carolina, Inc.**

The Garden Club of North Carolina, Inc., is an organization of more than 580 garden clubs with over 13,000 individual members throughout North Carolina. As a member of the National Council of State Garden Clubs, Inc., it is active at the national as well as the state and local levels in promoting gardening and horticulture, environmental improvements in urban areas, and the protection of our natural resources. For information on specific activities and programs of the organization and requirements for membership, contact: The Garden Club of North Carolina, Inc., P.O. Box 12585, Raleigh, NC 27605-2585.

### **The North Carolina Botanical Garden**

The North Carolina Botanical Garden is a center for research, conservation, and interpretation of plants native to the southeastern United States and exotic species with traditional uses or special botanical interest.

The Coker Arboretum and the Mason Farm Biological Reserve are included

in the Garden's 598 acres, all of which are a part of the University of North Carolina at Chapel Hill. The Botanical Garden is funded by the State of North Carolina with financial assistance from The Botanical Garden Foundation, a membership support organization.

The main visitor area on Laurel Hill Road in Chapel Hill features collections of native southeastern plants arranged by habitats and The Mercer Reeves Hubbard Herb Garden. Surrounding the Totten Center, the Garden's educational and administrative facility, are special collections of wildflowers, ferns, carnivorous plants, aquatic plants, and a plant families garden. There are more than two miles of interpreted nature trails through the Piedmont forest which comprises much of the Garden's lands.

The Garden demonstrates its commitment to conservation by preserving natural areas and promoting native plant propagation. The Wildflower of the Year cooperative project is only one part of our "Conservation Through Propagation" program. Staff members study the cultivation, propagation, and horticultural potential of many common species and protected rare species of native plants.

#### **Join the Garden and Learn More About Wildflowers!**

For more information on programs, guided tours, membership, members' seed distribution, and other services, call the Garden during weekdays (919-962-0522) or write to: North Carolina Botanical Garden, University of North Carolina-Chapel Hill, CB# 3375, Totten Center, Chapel Hill, NC 27599-3375.



## THE H.L. BLOMQUIST GARDEN IN SPRING

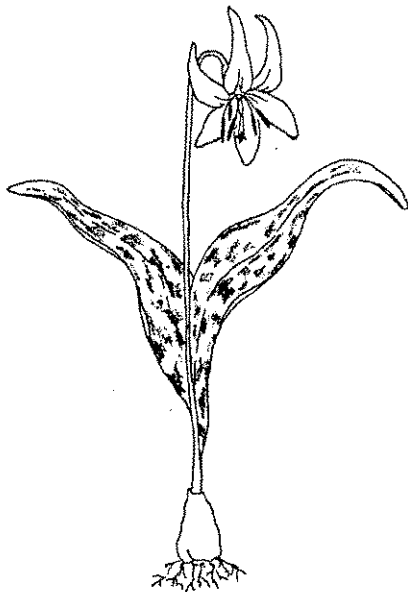
by Edwin Steffek, Jr.

Spring, the time of renewal, comes early to the H.L. Blomquist Garden, the six and a half acre native plant section of the Sarah P. Duke Gardens. The smooth alder, *Ahnus serrulata* and the skunk cabbage, *Symplocarpus foetidus*, usually the first natives in the collection to flower around the end of February, are not particularly showy, but do hint of things to come. The real show of spring ephemerals starts in late March, with the warming of the air and the lengthening of the days, and continues through May. During this period the visitor can observe some of the more showy spring wildlings such as trilliums, bloodroot and trout lilies. One of the first trilliums to flower, the dainty least trillium, *Trillium pusillum*, an endangered species, is rarely seen in the wild and would probably be overlooked except in a mass. On the other hand, the later flowering white trillium, *Trillium grandiflora*, is one of the most showy and easiest to grow. Bloodroot, *Sanguinaria canadensis*, getting its name from the red dye extracted from its roots, has beautiful but fleeting white water lily-like flowers. The double form *var. multiplex* is larger and more beautiful still. The yellow trout lily, *Erythronium americanum*, though rather common in rich woods, is still a delight to see each March. The rarer lime-loving white trout lily, *Erythronium albidum*, follows on its heels with its little white stars.

These are but a few of the early spring perennials that, along with the trees and shrubs, especially the azaleas, produce a delightful spring stroll. All the native azaleas are quite showy in a mass and several are quite fragrant. The Florida flame azalea, *Rhododendron austrinum*, along with the pinxter flower, *Rhododendron periclymenoides*, and the Florida pinxter azalea, *Rhododendron canescens*, all have a pleasant spicy scent.

With the varied terrain in the H.L. Blomquist Garden there is something new to see around every bend in the trail, over the next ridge or in the next ravine. Even by the pond, where spring is a little slower in coming, week by week, as with the rest of the garden, there is a changing tapestry of colors and textures as the plants reawaken from several months rest and get ready to flower.

*Ed Steffek, one of our members, is curator of the H.L. Blomquist Garden, the wildflower section of the Sara P. Duke Gardens.*



## 1991 EASTERN NATIVE PLANT ALLIANCE ANNUAL MEETING

*by Benson Kirkman*

The 1991 ENPA Annual Meeting, co-hosted by the NC Botanical Garden and the NC Wild Flower Preservation Society, will be held in Chapel Hill, July 21-24. The NCSU Arboretum, Duke Gardens, and Niche Gardens will be auxiliary hosts for events during the conference. In addition, the Triangle Land Conservancy and the NC Natural Heritage Program will be assisting with field trips for the conference.

The program for the conference is currently being developed, but will include sessions on "invasive plant species that are threatening habitats of rare and endangered native species—what is being done and what can be done," "coping with deer, beavers, and other wildlife that threaten habitats," and "pine straw raking and potential destruction of the remaining longleaf pine communities." Other sessions will include working group/committee reports and discussions dealing with topics such as conservation gardening and landscaping guidelines, landscape ordinances, habitat preservation tools and methods, and regulating collection and sale of native plants.

### Tentative Schedule

Sunday, July 21	Afternoon tours at the NCSU Arboretum and Margaret Reid's garden in Raleigh; catered dinner
Monday, July 22	Morning meetings and discussions at NCBG; 90 min. PM session on dealing with invasive species—presentation and discussion with panel of experts; concurrent 60 min. sessions on (1) longleaf pine straw raking and habitat destruction and (2) deer, beavers and other destructive animals; catered dinner and tours at Duke Gardens
Tuesday, July 23	Morning discussions and work sessions at NCBG; PM—brief reports from work sessions and discussions, summary and action plans; tours and social at Niche Gardens
Wednesday, July 24	Tour and discussions at White Pines Natural Area, Juniper Springs Natural Area, and several old growth longleaf pine communities

Members of the NCWFPS are encouraged to attend and participate. There will be a registration fee; we hope registration and individual membership information will be available for inclusion in the WFS Spring Meeting announcement. Space for the sessions will be limited, but we would like to have several of our members attend and become more involved in ENPA activities. I will be calling on some of our members to assist with arrangements for the conference.

The Eastern Native Plant Alliance (ENPA) is an association of organizations that promote and demonstrate native plant conservation in the eastern United States and southeastern Canada. ENPA members include professional, avocational, academic, business, governmental, and museum organizations in the Eastern Deciduous Forest and Coastal Plain Provinces. Ken Moore, former NCWFPS President, was one of the founders of ENPA, and Benson Kirkman, current NCWFPS President, is the Treasurer of ENPA. The Society is a constituent member of ENPA.

In addition to public education, ENPA encourages increased understanding of indigenous species and their ecological relationships; protection of the integrity and genetic diversity of native plant communities; and responsible, sustainable use of native plants to enhance human life.

Conservation of native species is a growing concern throughout the world. As wild habitats shrink, scientists and conservationists are seeking to preserve species diversity and the healthy ecosystems so essential to life. You can enjoy the beauty and variety of native plants in your landscape, and by everyday actions help insure the future of our common heritage.

### EXAMPLES OF INVASIVE ALIEN PLANT SPECIES THREATENING HABITATS OF OUR NATIVE SPECIES

Do you know these species? Are you growing these species and assisting their spread? These and other species are invading our natural areas and threatening the habitats of many of our most precious native species. The following list comes from Dr. Faith Campbell, Washington office of the Natural Resources Defense Council and a member of the Eastern Native Plant Alliance.

#### Woodlands

Kudzu	<i>Pueraria lobata</i>
Garlic Mustard	<i>Alliaria petiolata</i>
Winged Euonymus, Burning Bush	<i>Euonymus alatus</i>
Japanese Knotweed (Japanese Bamboo)	<i>Polygonum cuspidatum</i>
Porcelain Berry Vine	<i>Ampelopsis brevipedunculata</i>
Asiatic Bittersweet	<i>Celastrus orbiculatus</i>
Tree of Heaven	<i>Ailanthus altissima</i>
Japanese Honeysuckle	<i>Lonicera japonica</i>
Amur Honeysuckle, Shrub Honeysuckle	<i>Lonicera maackii</i>
Chinese Privet	<i>Ligustrum sinense</i>
Asiatic Mint	<i>Perilla frutescens</i>
Multiflora Rose	<i>Rosa multiflora</i>
Autumn Olive	<i>Elaeagnus umbellata</i>
Crown Vetch	<i>Coronilla varia</i>

#### Woodlands and Water Bodies

Purple Loosestrife	<i>Lythrum salicaria</i>
Hydrilla	<i>Hydrilla verticillata</i>
Giant Waterweed	<i>Egeria (Elodea) densa</i>
Chinese Tallow Tree	<i>Sapium sebiferum</i>

#### Grasses

Japanese Grass	<i>Microstegium vimineum</i>
Beachgrass	<i>Panicum amarum</i>

Several species forms of ornamental grasses—not hybrids and many of the cultivars—beware of those known for being weedy and reseeding heavily.



## A HISTORY OF THE UMSTEAD COALITION

by Frank Briden

The farming community of Cedar Fork was settled during the last century in an area roughly equidistant from Raleigh and Durham. The original forest cover of oaks and hickories was cleared to plant corn, cotton and tobacco. Initially the crops prospered on the rich soil that had accumulated over the centuries. Two mills were constructed to grind the grains. The Company, or Page, mill on Crabtree Creek was quite productive and came to serve as the center for community social functions. However, poor farming practices depleted the soil fertility and by the early 1900's the rocky, red clay could not support the population. Families had begun to desert the area when, in 1935, a Roosevelt New Deal program presented the impoverished families an opportunity to sell their land to the federal government. The goal of this new program, run by the Resettlement Administration, was to demonstrate how families could be assisted and how depleted farmland could be used for recreation and education. About 5,000 acres were purchased for an average price of \$11.65 an acre. Not all families accepted relocation and the right of eminent domain was exercised on 174 occasions. The Department of Interior managed the land for about 8 years and the Civilian Conservation Corps (CCC) was enlisted to reclaim the land. The mill was demolished, bridges and trails were constructed, trees were planted and checkdams were constructed to control erosion.

Because of World War II, the federal government could not be burdened with the cost of maintaining the area and it was sold to the State of North Carolina for one dollar. The transfer occurred under the condition that "*the state of North Carolina shall use the said property exclusively for public park, recreational and conservation purposes.*" Unfortunately, in 1948, five years after the deed was signed, the Raleigh-Durham Airport Authority was allowed to extract 1,840 acres from the park. This action initiated a chronic threat to the park from noise and from additional airport annexation. In 1968, the Airport Authority announced that it was preparing for expansion. This time the opposition was ready and Ben Smith and Art Cooper of North Carolina State University, Fred Ward of Duke University and a newcomer to environmental action, Margaret Nygard, formed the "Citizens to Save Umstead Park"; the predecessor of the Umstead Coalition. The attack on the park was repelled and the expansion was diverted to the opposite side of the airport.

After this successful citizen action, the Park received additional support from Federal Land and Water Conservation Fund for park developments. In accepting this money the State was further restricted from converting any of the park to non-recreational use. In 1973 Umstead Park was also registered as a preserve of the State Nature and Historic Dedication Act, providing additional protection. Despite these protective measures, threats to the Park did not abate. In the mid-1970's Wake Stone Company was successful in establishing a quarry immediately adjacent to the picnic area on the Reedy Creek section of the park. A loosely organized group of conservationists that were the predecessors of the Umstead Coalition fought the quarry but they were defeated by superior financial resources and political clout.

In 1986, Wake County had been establishing dams on most branches of Crab-

tree Creek at incredible expense, to protect an incredibly profitable shopping center that had been built in an incredibly poor location. The final stage of this project was to be Dry Dam 25, immediately downstream of Umstead Park. The dam would have flooded 300 acres of the most biologically diverse area of the park. To represent the opposition to this proposal, the resources of about a dozen conservation organizations were united to form the Umstead Coalition. As a result of the Coalition's actions, studies of the negative impact of the dam on the bottomland forest communities were conducted and the Department of Interior was notified. The proposal was deemed contrary to the provisions of the Land and Water Conservation Funding Act and the plan to flood part of Umstead Park was thwarted.

In early 1990, faced with diminishing state revenues and committed to a philosophy of "no new taxes," the Martin administration found itself in the red. This situation resulted in some minor bureaucrats, with more ambition than discretion, proposing that the state sell all or part of Umstead; ostensibly to help fund other state parks. The Umstead Coalition immediately acted as a focus for responsible public opinion and representatives of the constituent organizations met with Phillip McNelly, Director of State Parks. While Gov. Martin soon retracted the proposal, Mr. McNelly also assured the Coalition that there would be no more suggestions that the state would sell the park, and that the state would not delegate administrative or fiscal authority for the park to local governments.

The most recent threat to the park is the proposed extension of Duraleigh road. Despite considerable opposition the Raleigh City Council and the Department of Transportation are planning to put a major freeway through the southeast corner of the park. **This is occurring despite "protective" legislation included in the Department of Transportation Act of 1965 that mandates the protection of parkland from highways unless "there is no viable alternative."**

The Coalition has not limited its efforts to deflecting acute threats to the Park; it is also engaged in efforts to promote public appreciation of Umstead State Park. Coalition volunteers lead public nature hikes in the park and speak at meetings of community organizations. In our rapidly growing area it is important that the public learn the value of the Park and be made aware of threats to the park. As land values soar, the pressures on the Park from private and municipal interests will increase. Threats to the Park's environment and idyllic atmosphere will continue. The impact of roads, noise, urban congestion, airport expansion and waterway alteration are ubiquitous. It is the Coalition's position that not one acre of parkland be yielded. Umstead is an intricate biological community that functions as an oasis in the midst of our growing metropolis. It must not be subject to the slice and patch land games played by local and state governments that lack the foresight to recognize Umstead as a priceless community asset.

*Frank Briden, Co-chairman of the Umstead Coalition and a member of the NCWFPS.*

## WELCOME NEW MEMBERS

Adams, Mrs. Rosanna M.  
421 Farmstead Dr.  
Cary, NC 27511

Alexander, Mrs. Mary Edith  
365 Meredith St.  
Raleigh, NC 27606

Beam, Lynda C.  
312 Vernonburg Rd.  
Savannah, GA 31419

Briden, Frank  
1305 Knight's Way  
Raleigh, NC 27615

Carpenter, Albert & Susan  
6127 Sharon Hills Rd.  
Charlotte, NC 28210

Dameron, Cindy S.  
12608 Old Creedmore Rd.  
Raleigh, NC 27613

Drehmel, Dennis C.  
1131 Sturdivant Dr.  
Cary, N 27511

Duncan, Dr. Patricia Jane  
1321 Harding Place  
Charlotte, NC 28204

Ellers, Kathi W.  
Rt. 2, Box 231-A  
Clinton, NC 28328

Feil, Elizabeth  
10 Springside Park  
Asheville, NC 28803

Inman, Joseph C. & Margaret G.  
8 Pintail Ct.  
Brevard, NC 28712

Lanc, Amelia P.  
4904 Hermitage Drive  
Raleigh, NC 27612

McDermott, Marcia S.  
13 Tludatsi Ct.  
Brevard, NC 28712

McLellan, Elizabeth S.  
405 Colony Woods Dr.  
Chapel Hill, NC 27514

Millette, Bert & Joan  
Old Point 904 Cordgrass  
Hampstead, NC 28443

Martin-Marietta  
Attn: Carole Cameron  
Box 30013  
Raleigh, NC 27622

Parker, Michael Y.  
2040 Dakton Dr.  
Raleigh, NC 27606

Petersen, Kathlyn  
P.O. Box 212  
Otto, NC 28763

Post, Sidney  
P.O. Drawer 1089  
Fayetteville, NC 28301

Rinker, Dr. George E.  
817 Colonial Dr.  
Burlington, NC 27215

Schooley, Jo Anne L.  
2519 Vista Dr.  
Huntsville, AL 35803

Smith, Mr. & Mrs. John S.W.  
4 Brinton Way  
Elkton, MD 21921

Stein, Mr. & Mrs. John A.  
2921 Royster St.  
Raleigh, NC 27608

Tri-County Horticultural Club  
115 Depot St., c/o N. Wall  
Burnsville, NC 28714

We regret having omitted the names of these members from the list published in the last NEWSLETTER:

Jones, Paul  
148 Stagg Rd.  
Hillsborough, NC 27278

Tuggle, Mr. James R.  
903 N. Daniels Creek Rd.  
Danville, VA 24078



## NORTH CAROLINA WILD FLOWER PRESERVATION SOCIETY, INC. Aims & Objectives

The North Carolina Wild Flower Preservation Society was formed in 1951 by a group of individuals appreciative of native plants throughout the state and region. The purpose of the Society is to promote enjoyment and conservation of native plants and their habitats through education, protection, and propagation.

Spring and fall meetings are held at "natural gardens" across the state. Members exchange seeds and propagated plants at these meetings. Other excursions are organized on a local basis throughout the year.

The Society Newsletter is issued twice a year with articles and illustrations by professional and amateur contributors.

The Society publishes the "N.C. Native Plant Propagation Handbook" that is available for sale at the Botanical Garden or by mail (\$5.00 postpaid).

The Society Scholarship/Grant Fund sponsors research on native plants by undergraduate and graduate students. The fund is supported by member contributions and by gifts and memorials. Applications are made to the Scholarship/Grant Fund Committee for awards in May of each year.

The Society is a nonprofit organization under North Carolina and Internal Revenue Service regulations. Donations are tax deductible.

Correspondence concerning the Society and its programs should be addressed to: North Carolina Wild Flower Preservation Society, Inc., c/o North Carolina Botanical Garden, Totten Center 3375, UNC-CH, Chapel Hill, NC 27599-3375.

### MEMBERSHIP APPLICATION

Individual Annual Dues:       \$ 7.50  
 Family Annual Dues:         10.00  
 Sustaining Annual Dues:     25.00  
 Lifetime Membership:       \$150.00

Scholarship Fund Donation: \_\_\_\_\_

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_ Zip \_\_\_\_\_

New  Renewal

*Please send this and all address  
 corrections to;  
 North Carolina Wild Flower  
 Preservation Society, Inc.  
 Mrs. S.M. Cozart, Treasurer  
 900 West Nash Street  
 Wilson, NC 27893*

If you know your added four digit zip number, please include it in your address with your dues payment. It will soon be mandatory.







North Carolina Wild Flower Preservation Society, Inc.  
Totten Garden Center 3375, UNC  
North Carolina Botanical Garden  
Chapel Hill, North Carolina 27599-3375

Mrs. Pearson Stewart  
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