

NORTH CAROLINA *wild flower* PRESERVATION SOCIETY, INC.



SPRING
1982

S.M.G.

NORTH CAROLINA WILD FLOWER PRESERVATION SOCIETY, INCORPORATED

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ILLUSTRATIONS

Cover drawing of *Franklinia* is by Sandra Melvin Gray of Pleasant Garden, N. C.

The drawing of *Shortia* is by Anne H. Stronach of Wilson, N. C.

PRESIDENT'S MESSAGE

What a welcome sight to see Spring after the snow and ice storms of the past season! This reawakening of new life again prompts us to consider our marvelous heritage of native plants, and to be more mindful of the necessity for preserving their natural beauty.

We can each do our part by learning how to propagate these plants, sharing our knowledge and plants with others. I hope many of you have taken advantage of the seed bank which the North Carolina Botanical Gardens has so generously shared. It takes many hours to collect, sort, and package these seeds for distribution, and I want to thank those responsible for making them available. Let us continue to support and add to this effort by making our own collections and sharing with the membership.

My term as president expires May, 1982. It has been a rewarding experience and a real pleasure to have served you. I cannot adequately thank all those who gave counsel and help to me—the officers, board members, trustees, the Newsletter staff, and others too numerous to mention. My hope is that I will be privileged to reciprocate whenever possible. I am grateful to you all.

These are troubled times for our environment. It is being changed so rapidly by man's developmental progress that whole species may become extinct virtually overnight. The average person is not conscious of the destruction they create. I know our members will continue their fine work in sharing their knowledge of propagation, in working together to conserve, and in educating both ourselves and the public to preserve our natural heritage.

I look forward to seeing you on the mountain tops and in the coves near Hendersonville the weekend of April 24-25. This promises to be one of the best field trips ever!

Emily Allen, President

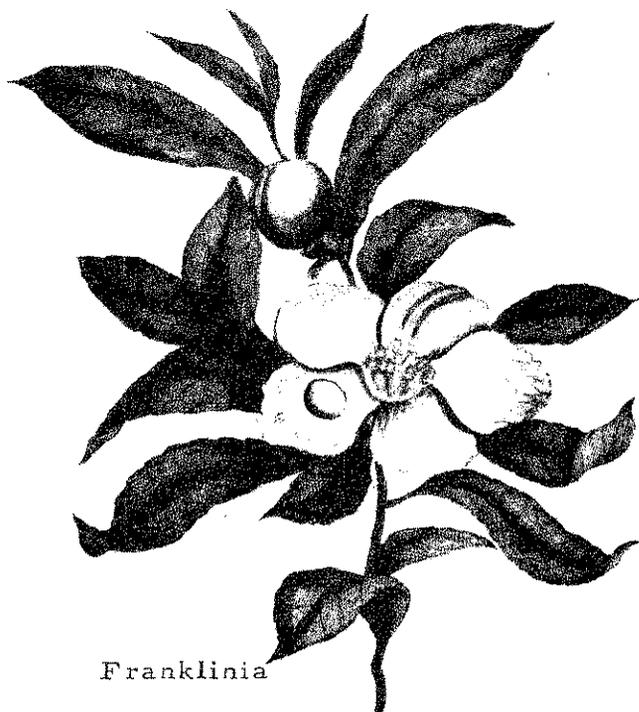
I will be the gladdest thing

under the sun!

I will touch a hundred flowers

and not pick one!

--Edna St. Vincent Millay



Franklinia

1982 SPRING MEETING

The 1982 Spring Meeting of the NCWFPS will be held Saturday and Sunday, April 24 and 25, in the Hendersonville area. Field trips will be arranged to visit Pacolet Falls, Pearson Falls, and Camp Green Cove. If time permits, the group will pay a special visit to the Shinnos on Sunday.

The Saturday evening program will feature a talk on the Hendersonville flora and the area's importance as an early center for botanical activity.

Schedule

Saturday

- 9:00 a.m. Meet at Hendersonville Holiday Inn parking lot for 9 o'clock departure on various field trips.
- 6:00 p.m. Buffet dinner and program - Same Holiday Inn restaurant.

Accommodations

Cabins (multiple occupancy) available at Camp Green Cove for under \$10 a night, depending on number of persons. Not heated; but hot water.

Holiday Inn on U.S. 64 East - rooms available @ \$27 to \$35. Telephone 692-7231.

Day's Inn, Fletcher, N. C. Rooms available @ \$25 to \$35. Telephone 684-2281.

Ramada Inn, on U.S. 64 East. Rooms available; For price, call 692-0521.

For Additional Information, call
Tom Howard, 309 E. Main St., Aberdeen, N. C. 28315
Telephone:
Bus. (919) 692-2167 +++++ Res. (919) 944-7883

FRANKLINIA
(Gordonia alatamaha)

No American tree or plant has captured the attention of horticulturists and botanists so much so as Franklinia (Gordonia alatamaha). None have been searched for in the wild more diligently than this cousin of the Loblolly Bay (Gordonia lasianthus). Found around 1765 by John and William Bartram in a single area along the Altamaha River in Georgia, it was last seen by Dr. Moses Marshall in 1790.

In 1773, William Bartram visited the location to gather seed, followed by two other trips in which he collected seed and plants for cultivation in England and the Philadelphia area; however, he may not have sent the first seed abroad. Nevertheless, plants in cultivation today most likely have originated with the Bartram collections and to William Bartram credit may rightfully belong for rescuing our first endangered species. It seems to have disappeared completely from the wild in the short period of 25 years after its discovery.

Many have explored the general area in which it was found without ever finding it. I should state here that the late Francis Harper expressed his opinion to me that they may have searched for it in the wrong places, the alluvial soil along the river. He thought the more likely habitat would have been on tussocks in one of the sphagnum bogs above the flood plain of the river under much of the same condition in which blueberries are often found. Another observation he gave me was of his discovery among early letters of the Philadelphia area wherein an order was given to collect 100 Franklinia plants, which could account for the disappearance of the plant in one clean sweep.

One of my trees growing here in Pleasant

Garden has its first flowers of the season (Aug. 4). These $3\frac{1}{2}$ inch fragrant beauties of short yellow stamens and broad white petals with eroded margins are my reward for successfully growing the plant after long years of disappointments. Earlier attempts resulted in lingering death of those I tried in my native soil here. It was Dr. Orwell Freeman, retired of U. S. Plant Bureau, who put me on the right track.

Having worked with Franklinia in the U. S. experimental gardens, he told me that he believed that some disease or diseases in our soil accounted for so many failures to grow it out of its natural habitat. Then, when Dr. Harper suggested that it grew in sphagnum bogs, I remembered that this offered a highly antiseptic condition. Wounded animals bury their injuries in sphagnum bogs to hasten healing. Animal bodies (including man) have been found in near perfect state of preservation in some of the lowland bogs of Western Europe. These observations helped me to understand something which puzzled me for many years, and that was why Gordon Butler had no difficulty growing Franklinia in his nursery near Fayetteville. His nursery is in an ancient peat bog. The blackness of the soil indicates that. Peat, consisting chiefly of a residue of sphagnum, is also antiseptic.

With these things in mind, I formulated a medium for growing my trees consisting of 40% peat, 10% leaf mold and 50% sand or sandy soil. Mr. Butler grows his nursery trees in full sun and recommends sunlight to his customers. My plants get only the evening sun, but they might do well with morning or full sun. Propagation may be by seed or cuttings. Some of my plants were by layering.

My experience with growing this species leaves me with certain conclusions, namely: Dr.

Freeman was correct in guessing that soil diseases resulted in many failures to grow *Franklinia*; Dr. Harper was right in thinking that *Franklinia* grew in bogs; Mr. Butler was right in insisting that the plant must have sun. All of these things tend to prove that the botanists have been searching in the wrong places.

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Editor's Note: Although John Bartram or his son, William, most likely requested that this tree be named for their friend Benjamin Franklin, it was actually Humphrey Marshall who officially named it Franklinia alatamaha.

While not directly descended from the Bartrams, author Lionel Melvin is connected to that family through numerous marriages beginning with the marriage of his great-times-five grandfather, William Salter, Esquire, the King's Magistrate in Bladen County, North Carolina, to Mary Lock, whose sister, Elizabeth, married Col. William Bartram, a half brother of John Bartram, the King's Botanist in America.

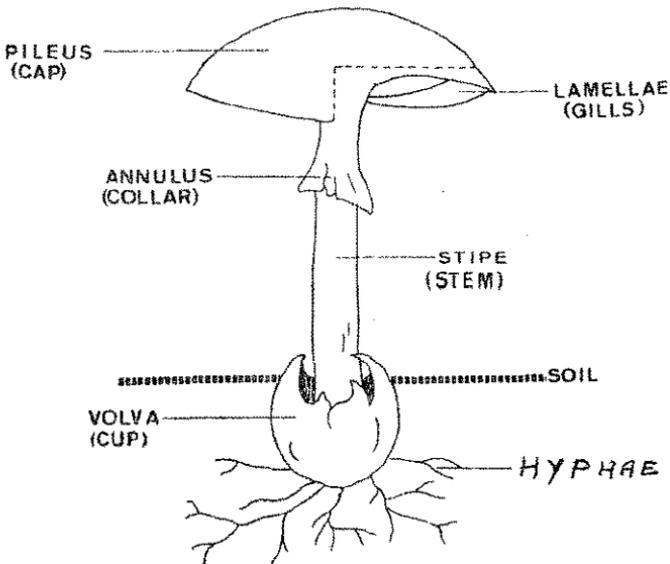
Mr. Melvin, whose daughter, Sandra, did the drawing of Franklinia alatamaha on our cover, has a nursery in Pleasant Garden and has often written articles on botanical subjects. He has served as president and in many capacities as a member of the North Carolina Wildflower Preservation Society.

THE STORY OF MUSHROOMS

by

Charlotte Gantz

Fungi are among the few classes in the plant world without chlorophyll. How then do they feed? The group as a whole takes in molds, rusts, mildews, yeasts, etc. as well as the familiar puffballs, earth stars, stinkhorns, polypores and gilled mushrooms, but we are only concerned here with the latter group, the ones commonly thought of as mushrooms. What we see in our woods, fields, and lawns is simply the fruiting body; the main part of the plant lies in the soil, in living wood, on its roots, or in the forest debris: leaves, rotting bark, twigs, limbs and stumps. Out of sight



The Parts of a Mushroom

are vast numbers of threads (white, yellow, red, brown or black)--the hyphae--which, for a brief time, usually, each year send up the conspicuous but short-lived mushroom or puffball. Shelf fungi are more persistent and may last for years.

Our question now becomes, on what do these hyphae feed? The answer is threefold. Some are helping to recycle the forest debris. In a recent article "Autumn Fungi" appearing in the New York "Conservationist," Fred Knauss noted that "It is estimated that about 10 million leaves fall on an acre of forest ground in one autumn and that three inches of that soil contain at least 100 billion tiny organisms, many of which are mold and mushroom type fungi." It is these tiny plants and animals that dispose of that leaf burden. Virginia S. Eifert says in "Exploring for Mushrooms", fungi "are the scavengers of the plant world, the 'vegetable vultures' which hungrily and incessantly devour dead plant and animal matter."

Some are parasitic. Here belongs the Honey Mushroom, Armillaria mellea, a killer of oak and fruit trees primarily, but attacking many other deciduous and coniferous trees as well, and one of the most destructive gilled mushrooms we have. It also consumes dead wood. Many of the shelf fungi are also killers. Fomes annosus is responsible for a root disease in shade and forest trees; Fomes pini destroys the heartwood in living conifers. Various other species of Fomes attack locust, aspen, birch and maple. The Sulphur Polypore (Polyporus sulphureus) is an enemy of both coniferous and deciduous trees and a number of other polypores are equally destructive of living trees.

The last group are symbiotic, existing in a mutually beneficial relationship with many trees,

heaths, orchids, mosses and liverworts. In this case the hyphae wind around the roots of the host plant, sometimes penetrating those roots. They take sugar from their host and in turn supply it with water, nitrogen, and salts of potassium and phosphate. The benefit to the tree or other plant may be enormous. Often the important salts and nitrogen may not be in soluble form, or for other reasons cannot be obtained by the tree. In poor soil such as we have in much of the sandhills, few young pines would survive without this mycorrhizal association. Often, too, the mycorrhizal fungus cannot exist without its host.

The relationship between trees and mushrooms has received most attention and much of this has only been recognized in recent years. It is clear, though, that some are attached only to conifers, some to oaks, some to birches, beech trees, etc. Generally speaking, the boletes, amanitas and russulas are among the most important having mycorrhizal associations. A few of these may be mentioned: Amanita muscaria (the Fly Amanita) is found on birch, larch, pine and spruce; Amanita citrina occurs with chestnut and birch; Boletus badius, B. luteus and B. granulatus on pine; B. edulis on birch; B. scaber on birch and poular, Russula emetica (the common red-capped mushroom of our woods) on oak.

Knauss, in the article cited above, says: Trees with mycorrhizal roots actually appear to grow faster than uninfected trees. For this reason, commercial foresters now artificially infect young saplings with certain fungi in order to promote growth. . . " So, the next time you see a mushroom, don't dismiss it as just a decorative item, as something that may be edible or equally well quite poisonous. Consider that you are looking

at a plant that may have murderous tendencies, may be a life-giving force, or may be helping to rid our planet of a mountain of waste.

Works cited:

Knauss, Fred. "Autumn Fungi," The Conversationist, Vol. 36, No. 3 (November-December, 1980), Albany, New York.

Eifert, Virginia S. "Exploring for Mushrooms." Story of Illinois Series, No. 3. Illinois State Museum, 1970.

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Charlotte Orr Gantz, a native of Pennsylvania, has been a lifelong student of natural history and has published three books. After leaving college, she followed a stage career, studied at the Columbia Law School and was a lawyer in the New York City Law Department. Charlotte and her husband Bob retired to Southern Pines where Charlotte is active in local environmental concerns.

THE SHORTIA TRAIN

by

Charles F. Moore

(as told to Patricia Ross)

Note: When Charlie Moore explored the Shortia growing near Lynchburg, Virginia, he had never heard of the "Toxaway Special." Below are his fascinating conclusions about their connection.

+ + +

It was in the early fifties when Dr. P. A. Davies, head of the Biology Department at the University of Louisville, appeared at my Duke Power Company office.

"I am seeking permission," he said, "to search Duke Power's Toxaway River property for a rare plant which I suspect may be growing there."

"You must be looking for Shortia galacifolia," I replied.

"Exactly!" he exclaimed. "Do you know where it grows?"

"Acres of it!" I replied. Thus began a friendship which was to last more than a decade, until his death.

Mr. Davies first learned of Shortia while preparing an address for the prestigious philosophical society of Louisville, "The Filson Club," on the life of Dr. C. W. Short, a well known Kentucky botanist for whom Shortia was named. So obsessed was Dr. Davies to learn more about this plant that he brought some of his students to South Carolina along the Keowee River and its tributaries in search of Shortia. He found it along a small stream, at the same location, where in 1889, the Smithsonian Institution had collected several wagon loads.

It was when Dr. Davies set out to find *Shortia* in North Carolina that my lucky day came; not only did we become great friends, but we had some interesting *Shortia* treks together.

Dr. Davies once made a special trip from Louisville when I reported to him that I had found *Shortia* germinating in the seed capsules. This he had never observed and of the thousands of blossoms I have seen, not more than nine have displayed this phenomenon.

In addition to our trips in the Toxaway area, we also explored *Shortia* in the Catawba River watershed. The *Shortia* there was smaller, grew more in clumps, and the leaves were more spatulate. The most obvious difference between the Catawba and the Toxaway blossoms was the length of the style. The Catawba style scarcely protruded above the anthers. Dr. Davies established the Catawba *Shortia* as *Shortia galacifolia* - Var. Davies.

In 1958, Dr. Davies asked me to accompany him to Virginia to observe *Shortia* recently discovered and reported by Dorothy L. Crandall of the University of Virginia. We crossed the James River at Lynchburg and went on to a bluff overlooking the river and the city. A somewhat obscure trail led from a log cabin to a spring in a glade where a large beech tree with the usual carvings dominated the scene. Underneath the spreading beech were magnificent patches of *Shortia*, some as large as four by six feet. Careful examination led us to establish the *Shortia* to be around fifty-five years old. A search of the whole region failed to turn up any other plants, thus we concluded that this colony had been planted in this spot. But by whom?

Upon returning from Virginia, I chanced to talk with Mrs. Henry Carrier, who along with

her husband, operated "Rockbrook," a well known summer camp for girls near Brevard. Mrs. Carrier had much Shortia growing on her place which she had planted in the early 1900's. According to Mrs. Carrier, (who, incidentally, was the granddaughter of P. T. Barnum) when the several hundred room Toxaway Hotel was completed in 1905, there was a great celebration. The Hotel was a grand one, drawing such guests as the Firestones, Thomas Edison, Diamond Jim Brady and the Rockefellers. For the Grand opening of the Hotel, the Southern Railway ran a "Special" with Pullman and dining cars, which took many prominent people, including Southern rail officials to Lake Toxaway. One thing that Mrs. Carrier would not forget--the dining cars were overflowing with Shortia: the wall vases were filled with Shortia, the dining tables were centered with Shortia; the bell shaped pinkish-white flowers and glossy leaves were even draped around the windows. It was a terrific display.

Shortia was still quite the thing in those days as only a few years before one pressed specimen had sold for around fifty dollars. The opening of the Toxaway Hotel took place about twenty years after this mystery plant, originally discovered by Michaux in 1788, then lost for a hundred years because of its limited distribution, was rediscovered by a Catawba River fisherman. Shortia was still the talk of the town and it made regal decor for a grand occasion.

Now, some conclusions: Our estimate of the age of the Shortia planted at Lynchburg coincided almost exactly with the date of the run of the "Special" to the Toxaway Hotel and its subsequent return to Lynchburg, which was a main rail center. It is not hard to believe the Shortia from the dining car found a home near the James

River, where it continues to flourish and bless its surroundings.

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Charles F. Moore, a retired Duke Power employee, lives in Brevard. He has found and photographed hundreds of Southern Appalachia's wildflowers. He, along with Dr. C. L. Rogers, chairman of Furman University's Department of Biology, prepared a brochure entitled "The Forests & Flowers of Keowee-Toxaway," with a beautiful Shortia photograph by Mr. Moore on its cover. Mr. Moore invites us to see the Shortia growing in his woods during the Spring field trip in May.



SHORTIA RESCUE
by
Charlotte Jones-Roe

Last November, shortly after receiving word of imminent construction, North Carolina Botanical Garden staff members drove to Pickens County, South Carolina, to rescue more than 2,000 plants of the rare Oconee Bells, Shortia galacifolia. Duke Power officials alerted the Garden to the construction of the company's 43 mile section of the Foot-hills Trail which threatened several populations of the plant along the steep-walled tributaries of Lake Jocassee.

Alfred Breedin, Duke Power Recreation Representative led the group into the Shortia site and assisted in locating the plants. Representatives from several North Carolina nurseries came in order to dig stock plants. Shortia has delicate pink or white lacy flowers and rounded lustrous green leaves like those of Galax, and there is great interest in marketing the plant as a ground cover. Charles Moore of Brevard and Jim Coke of Chapel Hill, both knowledgeable Shortia propagators, were on hand to give advice about growing the plants from seed and by division.

Shortia is protected by the North Carolina Plant Protection and Conservation Act of 1979. Like other Endangered and Threatened species of the state, Shortia is protected from unlawful digging or disturbance other than by the landowner or for development of forestry or agricultural use of the land. Commercial use of Shortia is closely regulated by the North Carolina Plant Protection Board's permit system. Only propagated stock of Special Concern plants may be sold, and nurseries may be inspected to make sure that no wild collected plants are offered to buyers.

The attractive Shortia requires cool temperatures, moist but well drained soil, and a protective shading canopy. The plant no longer exists in many of the mountain valleys where it once grew, because construction of lakes for hydroelectric power and nuclear power plant cooling have filled many of the low areas of western North and South Carolina.

Today the plant is known from native habitats in only North Carolina counties. While Today's efforts can never bring back Shortia's natural stream-side habitats, propagation of the plant may increase its numbers and make the beautiful plant common in gardens throughout the world.

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Any of our members who would like to know more about Native Plant Societies in neighboring states are invited to contact the following:

Georgia Botanical Society

Mrs. Daisy A. Bourne, Vice-President
6700 Peachtree Industrial Blvd., B-5
Doraville, Georgia 30360

Tennessee Native Plants Society

c/o Department of Botany
The University of Tennessee
Knoxville, Tennessee 37916

Virginia Wildflower Preservation Society

Mary Painter, Director
3718 Camelot Drive
Annandale, Virginia 22003
Telephone: 573-7747

BLOOMING DATES FOR SELECTED NATIVE PERENNIALS



SPECIES		APR
<i>Tiarella cordifolia</i>	FOAM FLOWER	
<i>Aquilegia canadensis</i>	COLUMBINE	
<i>Ranunculus bulbosus</i>	BUTTERCUP	
<i>Chrysogonum virginianum</i>	GREEN & GOLD	
<i>Thermopsis villosa</i>	CAROLINA BUSH PEA	
<i>Thalictrum</i> sp.	MEADOW RUE	
<i>Oenothera fruticosa</i>	SUNDROPS	
<i>Oenothera tetragona</i>	SUNDROPS	
<i>Penstemon smallii</i>	BEARD-TONGUE	
<i>Baptisia australis</i>	BLUE WILD INDIGO	
<i>Baptisia pendula</i>	WHITE WILD INDIGO	
<i>Penstemon digitalis</i>	BEARD-TONGUE	
<i>Gaillardia pulchella</i>	GAILLARDIA	
<i>Rudbeckia hirta</i>	BLACK-EYED SUSAN	
<i>Silene virginica</i>	FIRE PINK	
<i>Chrysanthemum leucanthemum</i>	OX-EYE DAISY	
<i>Echinacea laevigata</i>	PURPLE CONE FLOWER	
<i>Asclepias tuberosa</i>	BUTTERFLY WEED	
<i>Stokesia laevis</i>	STOKES ASTER	
<i>Echinacea purpurea</i>	PURPLE CONE FLOWER	
<i>Liatris spicata</i> (early)	BLAZING STAR	
<i>Hibiscus moscheutos</i>	MARSH MALLOW	
<i>Asclepias incarnata</i>	SWAMP MILKWEED	
<i>Helianthus tomentosus</i>	SUNFLOWER	
<i>Eupatorium fistulosum</i>	JOE-PYE-WEED	
<i>Rudbeckia triloba</i>	BLACK-EYED SUSAN	
<i>Rudbeckia fulgida</i>	BLACK-EYED SUSAN	
<i>Lobelia siphilitica</i>	GREAT LOBELIA	
<i>Lobelia cardinalis</i>	CARDINAL FLOWER	
<i>Liatris spicata</i> (late)	BLAZING STAR	
<i>Solidago rugosa</i>	ROUGH-LEAVED GOLDENROD	
<i>Solidago sempervirens</i>	SEASIDE GOLDENROD	
<i>Heterotheca mariana</i>	MARYLAND GOLDEN ASTER	

These approx
are based on
NORTH CAROLI

Rob Gardner, of the North Carolina Botanical Garden staff, reminds us that by using a chart such as the one on the preceding page, we can select species that give continuous bloom, thus having flowers all season long.

Some very nice color combinations that have been used at the Botanical Garden are black-eyed Susan (yellow) and butterfly weed (orange); Stokes aster (powder blue) and evening primrose (clear yellow); ox-eye Daisy (white) and fire pink (bright red); and a wonderful combination for the fall—blazing star (purple) and rough-leaved golden rod (yellow). Only your imagination and planning space will restrict the possibilities!

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A BIT ABOUT BARTRAM

John Bartram was born in America of emigrant parents who had come from Derbyshire in England. A farmer and botanist, he built a house near Philadelphia in 1782, laid out a garden and began filling it with rare and beautiful plants. He engaged a manager for his farm, a schoolmaster to teach him Latin, then set out for a life of plant-hunting, traveling through Pennsylvania, Maryland, the Carolinas, Georgia and Florida.

He was engaged by Peter Collinson to collect plants to send to England. In order to get them safely across the Atlantic, he shipped them in an ox bladder half filled with wet moss and the natural soil of the plant. In this way, hundreds of seedlings and plants arrived in England from 1734 until Collinson's death in 1768; such things as Magnolia grandiflora, Kalmia latifolia, Erythronium dens-canis, Michaelmas daisies, lilies, Viburnum dentatum, and collinsonias, which were named for the patron himself.

THE B. W. WELLS ASSOCIATION

by
Julie H. Moore

An organization has been formed to function as a support group for the B. W. Wells Interpretive Center at Rock Cliff Farm, a part of the Falls Lake Project of the U. S. Army Corps of Engineers. Many NCWPS members knew and were inspired by Bert Wells and are well acquainted with Rock Cliff Farm. Bert and Maude Wells were gracious hosts for many outings on the numerous trails on the farm which is so uniquely situated in a peculiar turn of the Neuse River.

As explained in Kay Lawrence's letter to the membership in the Fall Newsletter, Rock Cliff Farm is to be administered as an interpretive natural area by the North Carolina Division of Parks and Recreation. Though plans have been drawn up, a severe lack of funds has limited the effort that the staff of the Division of Parks and Recreation can devote to this worthy project.

The purpose of the Association is to assure that the concept of the B. W. Wells Interpretive Center, a living memorial to North Carolina's first ecologist, will be realized. The Association will provide support in a variety of ways during the interim period while state funds are lacking. A series of "clean up" projects are planned, for example, removal of honeysuckle and other vines and saplings from the cemetery fence. Trail maintenance will demand continual attention, and several new trails are desired to compliment the well-used trails established by Bert and Maude. (Maude Wells is now living in Raleigh). Actual construction efforts are needed to replace the roof of the barn and to rework portions of the stone wall. Association members have volunteered

to lead hikes emphasizing the various natural aspects of Rock Cliff Farm and to develop interpretive guides and displays.

Projects that may be of particular interest to NCWFPS members are the wildflower and shrub plantings envisioned for the open areas and near the home and along the stone wall and the collections of native blueberries and rhododendrons to be donated from horticultural research at N. C. State University.

Organized in November, the Association has elected Ray Noggle, President; Bill Ellis, Treasurer; and Kay Lawrence, Secretary. Dues are \$5.00 a year for individuals, and donations from groups or individuals are appreciated. All NCWPS members are invited to join and assist in bringing the concept of a living memorial to our own B. W. Wells to a reality.

Contact Dr. Ray Noggle, 2346 Churchill Rd., Raleigh, North Carolina 27608.

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Julie Moore, who is an ecologist for the Natural Heritage Program, has been instrumental in the preservation of some of our natural areas.

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FALL FIELD TRIP - B. W. Wells Interpretive Center at Rock Cliff Farm - tentatively scheduled for first or second weekend in October.

OUR NATIVE PLANTS AND BRITISH GARDENS

by
Tom Shinn

Last October while we were touring the pocosin areas of Robeson and Scotland Counties, I gathered some seed of Ilex amelanchar, a species which was entirely new to me. I knew that there was such a holly, but I had never seen it before.

After I returned home I gave our friend, Frank Knight, in England, a report of our trip, and enclosed a few of the Holly berries. Within a couple of weeks I had a letter from Mr. J. B. E. Simmons, Curator of the Royal Botanic Gardens at Kew, thanking me for the seed which had been passed on to him. I gathered from his letter that they had had this species at one time but had lost it, and he was pleased to have a fresh start.

I have had similar letters from other gardens in Britain. They prefer seed gathered in the wild and I try to give the location from which they were gathered as well as anything else concerning the habitat. Their appreciation always repays any efforts made in gathering and transmitting the seed.

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The North Carolina Native Plant Propagation Handbook was dedicated to Tom Shinn and his wife Bruce, who have been experimenting with native plants for many years at their home in Leicester, North Carolina.

More About Sowing Seeds Generously:

Two for the cutworm, one
for the crow,
One for the beetle, and
four to grow.

CAMASSIA SLOPES WILDFLOWER
AREA ACQUIRED
by
J. Merrill Lynch

The Camassia Slopes Wildflower Area along the Roanoke River in Northampton County has recently been donated to The Nature Conservancy by the Union Camp Corporation, a timber and wood products company. The 180-acre tract, situated on a series of steep slopes along the Roanoke, contains large populations of many wildflowers which are rare in North Carolina including one of only two known populations of the wild hyacinth (Camassia scilloides). Also present are dwarf purple larkspur (Delphinium tricorne), Dutchman's breeches (Dicentra cucullaria), wild blue phlox (Phlox divaricata), sessile trillium (Trillium sessile), and Atlantic isopyrum (Isopyrum viter-natum).

The Nature Conservancy will manage the area in its natural state in order to preserve the rare wildflowers and their habitat. Many members of the NCWFPS enjoyed a visit to the slopes during the 1981 spring meeting held at Roanoke Rapids. Members are urged to write Union Camp Corporation and express their appreciation for this generous donation and their hope that Union Camp will continue its record of commitment to the conservation and preservation of our most precious natural habitats.

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J. Merrill Lynch is an ecologist and ornithologist with the Natural Heritage Program in Raleigh, and he also works with The Nature Conservancy.

MISSOURI BOTANICAL GARDEN

The library of the Missouri Botanical Garden is actively collecting materials relating to wildflowers, endangered plant species, and local native floras. In particular, this collection encompasses newsletters of local, state, regional and national groups; guidebooks; pamphlets; posters; prints; cards and stationery; and other related publications. Since many of these publications have only limited distribution, assistance is sought in adding such items to the collection. Anyone having such materials, or knowing of their existence, is asked to contact Mr. James R. Reed, Missouri Botanical Garden Library, P. O. Box 299, St. Louis, MO. 63166, U.S.A.

In answer to the above request, Linda M. Lamm, the editor, sent Mr. Reed a packet of Newsletters of the NCWPS and the Propagation Handbook. She has had a letter from Mr. Reed stating, "We greatly appreciate receiving these and were able to fill many gaps in our file."

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The Missouri Botanical Garden, which was opened to the public in 1889, is well known to botanists all over the world. It was begun in 1870 by Henry Shaw and for many years was known as Shaw's Garden. Its most famous feature is probably the Climatron with its geodesic dome, which allows a magnificent display of tropical and semi-tropical plants to grow in a habitat which recreates their native climates.

Today, there are 117 major botanical gardens in the United States, including the North Carolina Botanical Garden in Chapel Hill, 38 in Britain, and nearly 200 in Western Europe.

FALL FIELD TRIPS IN THE CAROLINA BAYS

by

Nancy Julian

The fascinating natural areas of the Carolina bays awaited the NCWFPS members who attended the October 10-11 meeting. Merrill Lynch, ecologist with both the Natural Heritage Program and the Nature Conservancy, presented a slide-talk orientation on the bays before we set out on field trips on Saturday morning from Fayetteville. The bays were first observed via aerial photography and are typically elliptical wetland depressions oriented northwest to southeast, often banked on the southeast by a bare, sandy crescent. They range from two acres to over a thousand acres in size.

While bays occur along the east coast between New Jersey and Georgia, about 80% are found within the Carolinas. Despite many theories, no one knows the origin of the bays. Water movement, prehistoric meteor showers, or spawning beds formed by giant fish when ancient seas covered the coastal plain, are a few of the existing theories. The leading contemporary theory is that bays were formed during the major glacier period, under conditions of high rainfall and high water table, through action of strong unidirectional winds upon small ponds on sandy surfaces.

The North Carolina Natural Heritage program has tentatively classified bays into four types: (1) clay-based, found typically in the inner coastal plain, (2) peaty, as in Bladen State Forest, (3) bays with sandy soil overlying a relatively water-impermeable soil layer, and (4) water-filled, such as Lake Waccamaw.

Bays are named for the dominant species, commonly called bay trees, and often

contain large populations of endangered and/or rare plants. The natural diversity and ecological significance of Carolina bays has been recognized only recently protection areas do not exist for most of the foliage found in the bays. Only a small fraction of the original bays are undisturbed. Pressure on Carolina bays today comes from conversion to agricultural and forest production. In addition, the mining of peat as an energy resource is a threat in the 1980's.

The club members were divided into two groups for the three bays visited. Tom Howard, Regional Naturalist for the Division of Parks and Recreation, organized the trips. Julie Moore, Botanist with the Natural Heritage Program, Ken Moore, Superintendent of the North Carolina Botanical Garden in Chapel Hill, and Merrill were our leaders.

Under a threatening sky, which was to accompany us throughout the day, we stopped first at Antioch Bay. Walking a short distance through thicket and small trees, we knew immediately when we entered the bay, so totally different was the flora. Mid the pond cypress (Taxodium ascendens), a vast number of camphor weed (Fluchea rosea) seed heads were seen. As we wandered, we realized how easily we could become lost; the entire 109 undrained acres looked the same--there was not a single outstanding landmark. We were fortunate to find still in bloom the one rare plant of this bay, awn-petaled meadow beauty (Rhexia aristosa). New to me was Boltonia asteroides, also in bloom, and the tiny thread-like Bartonia virginica, sighted by Julie's eagle eye.

Our second stop was Goose Pond Bay. This 140 acre undisturbed clay-based bay is composed

of pond cypress and sarvis holly (Ilex amelanchier), an example of a highly unusual plant community. It is the state's largest known population of rare sarvis holly. The impervious clay layer, or fragipan, holds water through much of the year, favoring wetland plant communities.



Rhexia aristosa

After recovering from the abundance of sarvis holly with its profusion of berries, we noted redroot (Lachnanthes caroliniana), hat pins, awn-petaled meadowbeauty, and Viola lanceolata.

Laurinburg Bays were the last of our stops. We picnicked in the first of two contiguous bays--each with its own distinctive plant community; a fresh water marsh dominated by grass-sedge vegetation (Bay 1) and various pond cypress/herb communities (Bay 2). Several specimens of Iva microcophala, a rare member of the ragweed family found in North Carolina, were growing close by our picnic area. As we walked through broomsedge and Leersia grass, we found more evidence of Rhexia aristosa and redroot.

Passing into the second bay, we saw Lyonia mariana, with one solitary bloom, and the basal leaves of Centella asiatica. The second rare plant of the area, (Agelinis linifolia), was identified, and Tom Howard explained that this gerardia was the first species listed in Radford Ahles and Bell's Manual of the Vascular Flora of the Carolinas --making the "key work"--

i. e. "...corolla throat lacking yellow lines within." Happily, we saw a single flower to test the key.

Resuming our field trips on Sunday morning, accompanied by brighter skies, our caravan drove to Pretty Pond Bay. We were happy to have with us Mrs. Margaret Tunstall, owner of this 15 acre grassy bay. The dominant community is pond cypress/panic grass (Panicum hemitomon)/duck-potato (Sagittaria graminea var. graminea or S. teres). The endangered peripheral awn-petaled meadowbeauty is abundant and a large population of the insectivorous bladderwort (Utricularia juncea) is found toward the wet bay center.

The sun gave us its full blessing as we approached Oak Savannah Bay, our last stop. It was the least like a bay of any we had seen. The name originated from the blackjack oak (Quercus marilandica), which rims the bay. As we entered the area, large stands of Carphephorus bellidifolius and Aster concolor, greeted us. A short distance beyond, several plants of autumn snakeroot (Prenanthus autumnalis), and pine barren gentian (Gentiana autumnalis) kept photographers in the group occupied.

The bay's eight acres continued to surprise us with its wide variety of specimens. Gerardia tenella, Pycnanthemum flexuosum, (flexuosum), Aster paludosus, toothache grass, (Ctenium aromaticum), and bracken fern were frequent, as well as colic root and white and yellow-fringed orchids. The bay's center is dominated by pond cypress and zenobia-gallberry (Zenobia pulverulenta - Ilex glabra).

With regret, we returned to our cars for the drive home, our heads full of new awareness. We felt deeply indebted to our leaders for their knowledge and superb introduction to the Carolina bays.

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Nancy Julian is a research histologist in atherosclerosis (Comparative Medicine Dept.) at Bowman Gray School of Medicine. Her hobbies include hiking, wildflower photography, and collecting flower resource books.

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Dr. Lawrence E. Mellichamp, Assistant Professor of Biology at the UNCC, who is a trustee of the NCWFPS, is conducting a Garden Tour to England this summer. For more information, write him at The Office of Continuing Education, UNCC Station, Charlotte, N. C. 28223.

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Another of our members, Ollie Adams, is conducting a tour June 6-20, 1982, for those who want an in-depth look at gardens, country houses, villages, churches and the delights of the English countryside in Spring.

For information
call Ollie Adams

Meridian Travel Service, Inc.
2104 Cameron St., Raleigh, N. C. 27605
(919) 828-7431

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Okefinokee Album by Francis Harper and Delma E. Presley is available for \$14.95 from the Order Department, University of Georgia Press, Athens, Georgia 30602. Highly recommended. Dr. Harper, a former member of the NCWFPS was an authority on John and William Bartram.

MINUTES

FALL BUSINESS MEETING

N. C. WILD FLOWER PRESERVATION SOCIETY, INC.
October 12, 1981

The meeting was held at the Ambassador Pancake House, Fayetteville, N. C. President Emily Allen opened the meeting by thanking those members responsible for planning the two-day program: Tom Howard, Merrill Lynch, Charlotte Jones-Roe, Julie Moore, Phil Crutchfield and Ken Moore. She welcomed the visitors, with a special greeting for Maude Wells, widow of Dr. B. W. Wells, who was being honored this evening.

Our non-profit mailing permit is finally official after three years of hard work.

Ken Moore appealed for help with the Botanical Garden's seed exchange. Due to financial limitations, the staff will be unable to spend as much time on collection as in past years. He asked us to send quantities of good seeds from the common wildflowers in our gardens.

Prints of a painting of the American kestrel were offered to us by the artist, Skip Vetter, for \$25 each, of which \$5 will go to the Wild Flower Preservation Society.

The meeting was turned over to Dr. J. R. Troyer for a slide show honoring Dr. B. W. Wells, following which Tom Howard showed the film, Natural Gardens of North Carolina, by Dr. Hollis Rodgers of UNC-G. Two copies of the film have been purchased by the WFPS from memorial donations to Dr. Wells. One will be owned jointly by WFPS and the N. C. Botanical Garden, and one will go to the B. W. Wells Interpretive Center. The State has acquired the Wells property and wants to establish interpretive areas there. Dr. Noggle and

others will meet soon to explore this project. Tom Howard asked that anyone interested in helping contact him or Dr. Hoggle.

Bob Hyland submitted his resignation from the Board, as distance makes it difficult for him to fulfill his responsibilities.

Emily Allen has done a magnificent job of re-organizing the official documents files such as our charters, employers identification number from the IRS, and proof of our non-profit status. It was suggested that she leave a list of dates when these documents require renewal. These files will be kept permanently at the N. C. Botanical Garden in the Totten Center, together with the collected Newsletters.

Dr. Noggle is in touch with several possible publishers for our Propagation Handbook.

Due to conflicts, the Spring meeting date has been changed to April 24-25. The area around Camp Green Cove was a center for botanizing in the 1800s. The evening meal will be a buffet at the Holiday Inn; the evening program by Dr. Mellichamp will be on the area wild flowers. The Shinn property may provide us an optional trip. Cabins for the hardy will be available at low cost, without heat; a motel list is available for any who are interested.

The Fall meeting date was tentatively set for the first two weeks in October, possibly at the Wells property, which should be better established by then. Motels will be available in Raleigh; or a one-day meeting may be considered.

Respectfully submitted,

Gertrude Howell
Secretary Pro Tem

MINUTES
SPRING BUSINESS MEETING
N. C. WILD FLOWER PRESERVATION SOCIETY, INC.
February 28, 1982

The Spring Board meeting was held at the North Carolina Botanical Garden. Attendance was sparse, due to bad weather.

Gertrude Howell read the minutes of the Fall meeting. The treasurer's report, read by Gretchen Cozart, showed a balance of \$2,655.77; and the scholarship fund \$2,083.25. She explained that the \$1,000 debt payment from the Handbook Committee had been put into the Scholarship Fund to draw interest, but could be used for other needs in an emergency.

Lucille Grassia read the minutes of the Fall board meeting as printed in the Fall Newsletter. A correction was made in that a copy of the Newsletter will be sent to the Carolina Room of the N. C. University Library, not to the Chapel Hill Library as printed.

Harry Phillips suggested exchanging our Newsletter with other similar organizations on a complimentary basis, with the presidents or the editors, or both. Harry will investigate what organizations and printed materials would be useful to us. He favored more intercommunication between native plant societies.

Emily Allen expressed our gratitude to the N. C. Botanical Garden for supplying us with seeds, and Harry thanked us for helping with the collecting. Lucille Grassia suggested that we save time and money by contracting with the N. C. Botanical Garden to print additional copies of their seed list for our use when printing their own; we would reimburse them for the cost of these copies.

Mr. Cabot of the American Rock Garden Society wants his organization to meet with us in the North Carolina mountains in 1984. He will consult with Ken Moore in December. He will be very grateful for our help in planning the program and suggestions for routes, dates, trip leaders and field trips.

Richard Glaze, the lawyer who helped establish our tax-free status, made no legal fee charge. Emily Allen gave him a lexicon of plant names as a token of appreciation.

Respectfully submitted,

Gertrude Howell
Secretary Pro Tem

* * *

For additional information on wild flower cultivation, refer to the North Carolina Native Plant Propagation Handbook, compiled by the members of the North Carolina Wild Flower Preservation Society, available through the Botanical Garden. Price: \$4.00 at the Totten Center; \$4.50 by mail. Make checks payable to:

North Carolina Wild Flower Preservation Society, Inc.

Totten Garden Center, 457-A, UNC
North Carolina Botanical Garden
Chapel Hill, North Carolina 27514

MEMBERSHIP DUES

1982-83 dues are due May 1. Please help us save postage by mailing your check promptly to:

N. C. Wild Flower Preservation Society, Inc.
Mrs. S. M. Cozart, Treasurer
900 West Nash Street
Wilson, North Carolina 27893

WE WELCOME THE FOLLOWING NEW MEMBERS

Boggs, Mrs. Dick, Jr.
805 13th Ave., N.W.
Hickory, N. C. 28601

Buchheister, Mrs. Carl W.
150 Carol Woods
Chapel Hill, N.C. 27514

Burney, Mr. & Mrs. Ed
P. O. Box 1034
Valdese, N. C. 28690

Dinger, Mrs. J. E.
3304 Andover Place
Suitland, Md. 20746

Frederiksen, Ms. Phyllis K.
6723 A Irongate Rd.
Fayetteville, N. C. 28306

Giles, Mrs. Alice R.
4216 Oak Park Rd.
Raleigh, N. C. 27612

Kincaid, Mrs. Steve
113 Rockwood Dr.
Lenoir, N. C. 28645

Kirkman, Mr. & Mrs. C.H.
8500 Fox Run
Potomac, Md. 20854

Knight, Mr. Frank
3 Newlanda
Elmsett, Ipswiew
England IP76NZ

Miller, Mrs. Walter Y.
1316 Milestone Dr.
Silver Spring, Md. 20904

New York Botanical
Garden Library

Bronx
New York 10458

Schail, Mr. & Mrs. Harold
10 Graystone Rd.
Asheville, N. C. 28804

Thomas, Mrs. Louise H.
Rt. 1, Box 128
Morven, N. C. 28119

Vollier, Mr. Jaque
7817 North Club Circle
Milwaukee, Wisc. 52217

Walker, Charles A., Jr.
1512 Gorman St.
Raleigh, N. C. 27606

Woodruff, Mrs. Telza L.
186 Lake Forest Pkwy.
Wilmington, N. C. 24801

NOTES

**NORTH CAROLINA
WILD FLOWER
PRESERVATION
SOCIETY, INC.**



900 WEST NASH STREET

WILSON, NORTH CAROLINA 27893

NORTH CAROLINA WILD FLOWER PRESERVATION SOCIETY, INC.
Mrs. S.H. Cozart, Treasurer
900 West Nash Street
Wilson, North Carolina 27893

MEMBERSHIP APPLICATION

Regular:	\$5.00	New	[]
Sustaining:	\$25.00		
Life:	\$100.00	Renewal	[]

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP CODE _____



North Carolina Wild Flower Preservation Society, Inc.
Totten Garden Center, 457-A, UNC
North Carolina Botanical Garden
Chapel Hill, North Carolina 27514

Miss Marianna Long
2739 Sevier Street
Durham, NC 27705

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SPRING MEETING
APRIL 24 & 25
See Page 4