

SPRING 1985



White Cedars

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Cover Drawing by Karen Lynch who lives on the Neuse River near Raleigh and works with the N.C. Department of Natural Resources' Biological Monitoring Program.

PRESIDENT'S MESSAGE

Many of us are beginning to assess winter damage in our gardens and favorite nature trails. It has been a hard winter. If you have observed particular patterns of plant behavior in your community, let us know. Such information would be of great value to others planning gardens and natural areas. Information needed should include: plant name (species, cultivar), aspect of site (slope, soil, light, moisture, etc.), age of planting, source of plant material, any special features of plantings. Send the information to me.

Elsewhere in this issue of the Newsletter you will find stories about two of our projects--the Scholarship Program and the Guide to North Carolina Gardens and Natural Areas. We have made two grants-in-aid, one to John T. Soule, Department of Biology, University of North Carolina at Charlotte, and the other to John D. Penkacik of the Department of Horticultural Science, North Carolina State University, Raleigh. We look forward to reports from these young men when their studies are completed. We also are soliciting new proposals for 1986. Pass the word to friends and colleagues about the Scholarship Program.

The Guide program is new, but Julie Moore has received a number of site descriptions of public and private gardens and natural areas. We know there are many more in the State--help us locate them. The first list may be published in the Fall Newsletter.

Governmental agencies (city, county, state, and federal) are now making decisions about spending our tax money. All too often plants and natural areas are perceived as having low priority when programs must be cut to meet budgetary restrictions. Let your elected officials know of your concerns. There are several groups here in North Carolina which merit our support--Conservation Council of North Carolina, 307 Granville

Road, Chapel Hill, NC 27514; Friends of State Parks,
Bob Conner, 1405 Emerywood Drive, High Point, NC 27262.
Join with them in promoting efforts to conserve our
natural resources and to maintain our state park
system. Your letters do count!

Ray Woggle



White Cedar

TAKING STOCK OF WHITE CEDAR WETLANDS

by

Julie Hackney Moore

In October I was fortunate to participate in a meeting that focused on a particular conifer well known to many North Carolinians, the Atlantic White Cedar (*Chamaecyparis thyoides*). Because this stately tree is more abundant in North Carolina than anywhere in its range which extends from Maine to Mississippi, I felt it was important to both contribute information on the habitats and status of White Cedar in our state and to become aware of the total White Cedar picture.

The following paragraphs come from an article by Laura Tangley that appeared in BioScience, Volume 34, Number 11, and give an excellent account of the meeting:

Anyone who has traveled the east coast of the United States all the way from Maine to Florida needs no degree in botany to realize that the make-up of plants and trees changes dramatically from the cold, northern tip of Maine to the warm, subtropical south. It might take a plant specialist, on the other hand, to notice how much stays the same. Patchily distributed along the entire coastline, for example, are clusters of tall evergreens, Atlantic white cedars (*Chamaecyparis thyoides*), dominating unique freshwater swamp ecosystems.

Known also as the coastal, eastern, and southern white cedar, (*Chamaecyparis thyoides*) thrives in water-logged organic soils only within a narrow, 50- to 100-mile-wide strip of the East and Gulf Coasts of America. The cedar swamp's distinctive tea-colored waters are both highly acidic and nutrient poor. Flora and fauna common to other freshwater wetlands--including fish, snails, and mosquitoes--cannot live here. Those that can have evolved unusual means of survival. Often, plants and animals of the white cedar swamp will differ sharply from those of adjacent ecosystems. Some cedar swamps host species rare or absent everywhere else in the world.

Because of their inaccessibility and spotty distribution, (*Chamaecyparis thyoides*) swamps have remained relatively unstudied. Recently, however, at the first Atlantic White Cedar Wetlands Symposium, at least 100 people gathered who knew a great deal about cedar swamps. Made up primarily of botanists and plant ecologists, the group also included zoologists, hydrologists, foresters, land managers, environmentalists, and representatives of timber companies. The diversity of subjects covered at the three-day meeting in Woods Hole, Massachusetts, reflected the group's diversity. But there was cohesiveness as well. Symposium participants not only found out what their colleagues study, they also began making plans to coordinate their diverse research areas. In addition, participants nearly unanimously expressed concern about the increasing destruction of cedar swamps and discussed strategies for preserving these valuable wetland ecosystems.

Atlantic white cedars grow in four major regions of the country: New England's glacial kettles and Outwash Plain; the north coastal plain--New Jersey's pinelands and the Delmarva Peninsula; the Great Dismal Swamp and the Carolinas; and Florida and Alabama. Researchers at the symposium presented data on the distribution and characteristics of swamps within these regions.

Although white cedar wetlands show some remarkable similarities from north to south, presentations from the four regions revealed differences as well. "What impressed me is that the number of habitat types white cedar grows in is fairly large," said Dennis Whigham of Smithsonian Environmental Research Center in Edgewater, Maryland. "White cedar grows in a lot of different situations, and often we don't know why it occurs where it occurs."

One disturbing trend throughout all four regions is that *Chamaecyparis* wetlands are rapidly disappearing. Although data on the cedar's historical distribution is sketchy at best, old natural

history surveys and logging records confirm that the trees were once far more abundant and their stands more contiguous than they are today. Like most freshwater wetlands lost since colonial times, cedar swamps have been dredged and drained for farmland, cleared and filled for residential development, and polluted from a host of different sources.

In addition to feeling these pressures common to all freshwater wetlands, Atlantic white cedar swamps have suffered from timber harvesting dating back to the 1800's. Cedar wood, which is durable, resists insects, and weathers to an attractive grey, has long been prized throughout the country for shingles and fenceposts. Today large-scale commercial harvests are restricted to North Carolina (90% of the wood products are shipped to New England), but smaller harvests continue to take their toll where logging practices do not promote cedar regeneration.

Accompanying any timber harvest, agricultural conversion, or urban development are changes in swamp hydrology that can have disastrous results. Atlantic white cedars are adapted to very specific water levels and chemistry--high acidity and low nutrients, in particular. Changes in soil saturation or in pH, nitrogen, and phosphorus concentrations encourage competing deciduous tree species to invade cedar swamps, completely displacing *Chamaecyparis* and its associated plants and animals.

Regenerating Atlantic white cedar is not easy. Physical, especially hydrological, and chemical conditions must be nearly perfect to prevent hardy competitors--often red maple (*Acer rubrum*)--from moving in and taking over the logging site. In addition, managers must remove most of the slash, allowing periodic small fires, and sometimes control deer browsing before sensitive cedar seedlings will take hold. Even then, regeneration efforts may fail. Part of the problem with regenerating Atlantic white cedar is that managers still do not know enough about the tree and its

interactions with competing hardwoods. Another goal of the cedar symposium, then, was to identify important research needs such as these and get investigators working on the problems.

At the final roundtable discussion, participants recommended studying--in addition to *Chamaecyparis thyoides* itself--other species living in the habitat. "About flora, we do have a tremendous amount of data," said Aimlee D. Laderman of the Marine Biological Laboratory in Woods Hole and chairman of the symposium. "But the fauna, our knowledge is depauperate." In addition to more species specific research studies of cedar swamp hydrology, biogeochemistry, and ecological processes--including productivity, decomposition, and nutrient cycling--were suggested by various participants.

Echoing throughout the specific recommendations was a call for more cooperative and interdisciplinary research. Atlantic white cedar swamps, which span habitats from the boreal to the subtropical, are particularly well suited to such interdisciplinary work. At the end of the cedar symposium--with proposals for a "bog center" and regular newsletter in the works--it looked as though *Chamaecyparis* researchers were at least making a good start in that direction.

The proceedings of the symposium which include a variety of papers on habitats, research, associated species, and protection of White Cedar are currently being edited by and will be available from Dr. Aimlee Laderman, Post Office Box 689, Woods Hole, MA 02543.

* * * * *

Who are the violets now
That strew the green lap of the new come Spring?
Shakespeare
1564-1616

SEED VIABILITY

by

Dorothy Wilbur

Did you save unused vegetable and flower seeds that were packaged for the 1984 season? If they were stored in a cool, dry place, many varieties of seeds will remain viable for several years. Seeds of some plants have been known to germinate after many, many years. Evening Primrose seeds, dock, and mullein can remain viable for 100 years or more. Older still were Lotus seeds found in Manchuria which are known to have germinated after 1040 years, and Arctic tundra lupine seeds found buried frozen in Arctic soil germinated after 10,000 years. Scientists can make these accurate age determinations by geological methods and radioactive carbon dating. These tests have also proven as false the claims that grains taken from ancient Egyptian tombs germinated.

Back to our garden seeds though. Most will last 2 to 3 years, though okra, onion, and parsley seeds usually last only one year. The trick to keeping seeds alive is to find a way to reduce respiration. Seed companies do this by packaging vegetable and flower seeds in vacuum packages. Without oxygen and moisture, respiration is reduced to a bare minimum. If you want to store seeds you have collected from the home garden, be sure the seeds are completely dry, then place in airtight jars. One source suggests the addition of a small amount of silica gel or dry powdered milk to absorb and hold any water molecules that may be around. I keep my seeds in jars in one of the hydrators of the refrigerator.

That takes care of dry seeds of vegetables and flowers. Suppose you would like to grow plants of your favorite nandina or magnolia or dogwood. All three types of fruits are red berries but each must be treated in a different way. Nandina seeds have an extremely short viability time and must be planted immediately after collecting. Magnolia seeds have growth inhibiting chemicals in the pulp surrounding the seed and won't germinate until the pulp, and chemicals, are removed.

Luckily in nature the red fruits are attractive to birds and by the time the bird has digested the pulp and deposited the seed, it is not only cleaned of the growth inhibitors but has been carried some distance from the parent plant. Careful cleaning of the seed before planting should achieve the same goal.

Dogwood berries need a period of cold treatment before they will germinate. The seeds can be planted in flats outdoors over the winter - or the cold period can be simulated by storing the seeds in moist peat or sphagnum in the refrigerator for three months. This required cold period insures that the seed will not germinate in the fall only to be killed by freezing temperatures.

Seeds have developed fascinating methods of insuring the perpetuation of the species. These have been just a sampling of the ways plant species have been able not only to survive but to flourish. Maybe that's why there are so many weeds in my garden.

* * * * *

WINSTON-SALEM, N.C. - The fifth "Restoring Southern Gardens and Landscapes Conference" will be held in Old Salem October 3-5.

The theme of the conference, which is held every 18 months, is "400 Years of Southern Gardening." Registration is open to anyone interested in gardens and landscape restoration.

Sponsors of the conference are Old Salem Inc., which is responsible for the restoration and operation of Old Salem, an 18th century Moravian town; by Reynolds Gardens of Wake Forest University, gardens on the estate of the late R. J. Reynolds, founder of R. J. Reynolds Robacco Co.; and by Stagville Preservation Center of the N. C. Department of Archives and History.

For more information write Gene Capps, RSGL Registrar, Old Salem Inc., Drawer F, Winston-Salem, NC 27108; or phone (919) 723-3688.

JOHN KUNKEL SMALL--AN APPRECIATION
January 31, 1869 - January 20, 1938

No section of the continental United States surpasses the region commonly referred to as the southeastern states in the abundance of its vegetation, the variety of its flora, or the number of its plant species. Soil, topography, climate, all combine in making it an unusual floral region. It has attracted the attention of botanists, plantsmen and collectors. Here came in earlier days Catesby, Ellis, Walter, the Frasers, the Bartrams, the Michauxs, Drummond, and others, in search of medicinal plants and garden materials. The labors of all these enriched the gardens of other lands. Here lived and worked such men as Chapman, Mohr, and Tracy, who, through their studies and collections, added greatly to the botanical knowledge of this vast area. Yet all these left the region only partially explored and known. Much of it during their day and time was difficult or well nigh impossible of access. Much of it had never known the footsteps of botanist or collector and in consequence knowledge of the plants of the region was incomplete.

About the beginning of the twentieth century Dr. John K. Small, connected with the then recently established New York Botanical Garden, turned his attention to the botany of the southeastern states. His first trip into North Carolina in student days was in 1891, and into Florida in 1901, and from the latter date down to his death, January 20, 1938, his interest in the area and the plants peculiar to it never ceased. One or more trips annually were generally made. He brought to the work to which he had set himself thorough training, a retentive memory, keen discernment of form and color, unswerving devotion to his undertaking, and physical stamina such as few possess. No journey was too difficult, no road too hard, no morass too deep to stop him. These but challenged his powers, mental and physical. He wrote of his journeys and the plants he found in more than ninety papers. To read them is to realize how intimately he knew his subject and in what great measure he was able to take his reader with him. Doctor Small's

interest centered not only in the herbarium material that he procured, but more definitely in the living plants he met. Had it not been for this later interest, it is doubtful whether he would have been able to establish a satisfactory basis for many of the classifications he made. Above all else he was a field worker.

In 1903 his "Flora of the Southeastern United States" came from the press,--a huge volume of 1370 pages--and a second edition was published in 1913. These volumes embraced the areas included not only in the southeastern states but extended well over into Texas. When his "Manual of the Southeastern Flora" was issued in 1933, the area was reduced to that portion of the United States lying east of the Mississippi River and northward to include Tennessee and North Carolina, and, though this volume appears smaller in size because of thinner paper, it has a total of 1554 pages and describes more than 5500 species. Many plants new to botanical science were described and new genera established in his floras and in smaller books and papers. As a result of his labors, the foundations for botanical knowledge of the southeastern plants have been placed upon a basis that possibly would not have been established otherwise except after the lapse of many years.

From the beginning Doctor Small was interested in ferns and these formed the subject of several distinct publications. Five papers attest his interest; the first of these was published in 1918. Two books, "The Ferns of Florida," 1932, and "Ferns of the Vicinity of New York," 1935, have come from his pen.

Doctor Small was absorbed in his botanical studies: otherwise it would have been impossible for him to cover the widespread field that he did. His absorption resulted in his being known only to a limited circle of workers with a common interest. These were wholeheartedly his friends. They appreciated the ability, the integrity, and above all the comradeship of the man who gave of himself so generously in the furtherance of the

science that interested him. Because of that centered interest the botany of the southeastern states has been advanced many decades. He found a limited scattered plant knowledge, he expanded it, segregated it, made it available for a vast area. His name will always be associated with the plants he loved so much.

University of Florida,
Gainesville, Florida,
May 1, 1938

H. Harold Hume

Appreciation to Steve Leonard for submitting the above article on Dr. Small.

SAPODILLA FAMILY (Sapotaceae)



SANDHILL-BUCKTHORN (*Bumelia lacuum*) The buckthorns are mostly evergreen shrubs or trees, usually with thorny branches. Nine species have been reported in the South. The sandhill-buckthorn has leaves, lustrous-white beneath, often becoming brown. Flowers are relatively small with 5 conspicuous staminoids. Berries are on short pedicels, oval and about $\frac{1}{3}$ " long. Discovered and named by the late John Kunkel Small. Sandhill scrub of c. Fla.

"Flowers of the South"

by

Greene & Blomquist

KIDNEY-LEAF
TWAYBLADE

Listera smallii Wiegand

The scientific name of this tiny orchid, only 4-10 inches tall, does not refer to its size but indicates that the plant was named for the botanist, J. K. Small, who discovered it. The 2 wide leaves are less than an inch long.

A rare plant of the Appalachian Mountains found in bogs, the humus of Rhododendron thickets, or on moist, wooded slopes in western North Carolina.

"Wild Flowers
of
North Carolina"

by

Justice & Bell

ENDANGERED U. S. PLANTS TO BE COLLECTED, CONSERVED

The seeds have been planted, figuratively, for a major private effort to collect and preserve the more than 3000 endangered varieties of plants in the United States. The program, which has been developed by scientists from 14 leading U. S. botanical gardens and arboretums, calls for the establishment of a national Center for Plant Conservation.

The size and diversity of the planned collection require that it be divided up into regional centers, where climate and scientific expertise will be most closely suited to particular plant varieties. Thus, the center will actually be a consortium of botanical gardens, with headquarters at Harvard University's Arnold Arboretum. Backers of the center are currently seeking foundation support.

The desirability of such a collection has been talked about for many years and was strongly recommended 6 years ago in a National Academy of Sciences report, "Conservation of germplasm resources, an imperative." Until now, however, there has been no real effort to build such a collection despite its imminent feasibility, according to Francis Thibodeau of Arnold Arboretum, the acting scientific director of the center. Although federal laws lay down a theoretical structure for preserving such species, conservation efforts are "hampered...by institutional impediments," he notes.

There are few parallels to the center, Thibodeau says. The closest one is the comparatively informal program directed by Kew Botanical Gardens in London for tracking rare European species. He says the U. S. Department of Agriculture maintains an extensive, well-organized collection of agriculturally useful plant varieties, but its goals are "much more utilitarian" than are those of the new center.

The collection of plants to be gathered for the new center represents from 10 to 15 percent of wild species in this country that are either "seriously

endangered or threatened," Thibodeau says. "That's a very shocking number." Though the intricacies of why any particular species is threatened may vary, virtually all are faced with "human-induced problems," he says. "Botanists don't find that plants are going under for no apparent reason."

Besides its immediate goal of finding and saving endangered plants from extinction, the center is expected to serve several needs of the plant research community. First, it will offer plentiful opportunities to study rare plants about which little is known beyond their structural features. By growing them in botanical gardens, researchers will be able to study their growth and ecological requirements. And eventually, as the collection grows and its diversity becomes more widely appreciated, researchers may comb through it looking for sources of unrecognized medicinals or other potentially useful chemicals.

The center expects to secure grants that will allow it to begin implementing plans soon. The early stages will involve identifying and collecting the most vulnerable species, leading gradually to an ever-larger collection.

-- Jeffrey L. Fox

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The North Carolina Botanical Garden is a Participating Institution.

- - - - -

And a bird overhead sang Follow,
And a bird to the right sang Here;
And the arch of the leaves was hollow,
And the meaning of May was clear.

A. C. Swinburne
1837-1909

NATURAL AND GARDEN SITES

The initial response has been good to the request for information on natural and garden sites of interest to Wildflower Society members which are or can be made available to wildflower enthusiasts. Details on a variety of places to visit have been submitted and we are soliciting more for a special newsletter or handbook to be compiled this summer. The following list of areas so far submitted indicates the diversity of places that our members feel others would enjoy.

Camassia Slopes Natural Area, North Hampton County
Chimney Rock Park, Rutherford County
Daniel Boone Native Garden, Watauga County
Davidson County Community College Natural Garden,
Davidson County
Deflora Wildflower Trail, Ashe County
Gordon Butler Nature Preserve, Cumberland County
Green Cove Camp, Henderson County
Nags Head Woods Nature Preserve, Dare County
Penny's Bend Natural Area, Durham County
Rock Cliff Farm, B. W. Wells Interpretive Area,
Wake County
Susie Harwood Garden, Mecklenburg County
Calvary Episcopal Church Yard, Edgecombe County
Van Landingham Glenn, Mecklenburg County

The write-up by F. Ray Derrick for the Deflora Wildflower Trail illustrates the details needed for each site. Please provide me with information on your favorite or noteworthy wildflower sites you feel others would enjoy whether they are in your own back yard, national parks or forests, state parks or are privately owned gardens or nature preserves. Suggestions on areas you feel should be included are also welcome.

Julie H. Moore
518 Elm Street
Raleigh, NC 27604
919-833-2302

SAMPLE GUIDE FOR MEMBERS TO FOLLOW

Ashe

Deflora Wildflower Trail

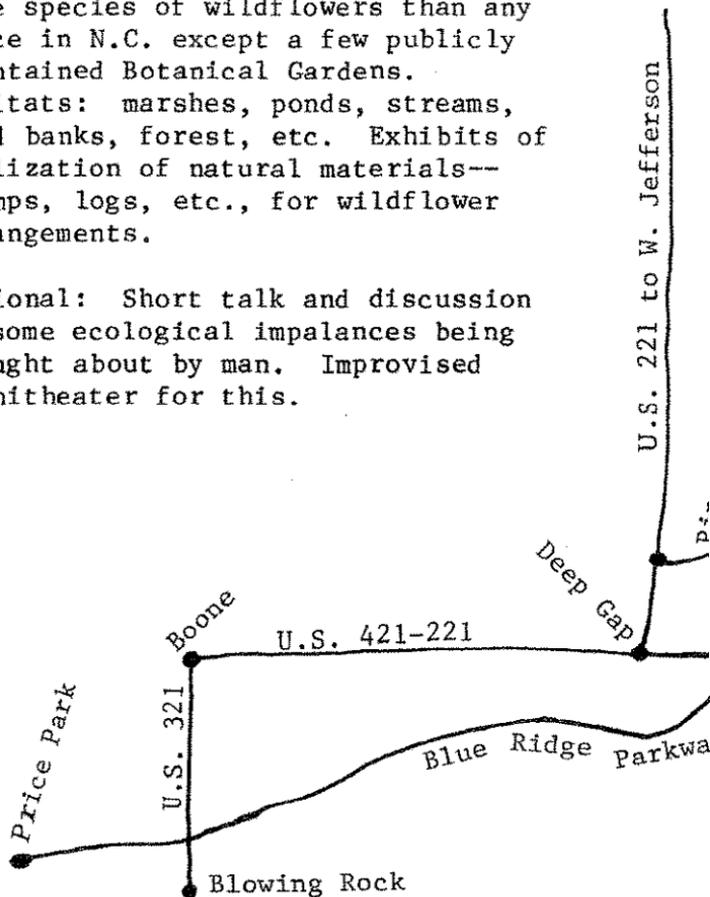
Contact: F. Ray Derrick, Dept. Biology, A.S.U.,
Boone, N.C. Phone: 704-264-8467

By appointment only. For any interested
group--carload, busload.

Directions: From Deep Gap, N.C., take U.S. 221 north
two miles to Pine Swamp Road. I meet
groups there.

Features: During a one hour walk one can see
more species of wildflowers than any
place in N.C. except a few publicly
maintained Botanical Gardens.
Habitats: marshes, ponds, streams,
road banks, forest, etc. Exhibits of
utilization of natural materials--
stumps, logs, etc., for wildflower
arrangements.

Optional: Short talk and discussion
on some ecological imbalances being
brought about by man. Improvised
amphitheater for this.



Special Plants

Yellow ladyslipper
Gay wings (Polygala)
Gray's lily
False hellebore
Marsh marigold

Yellow fringed orchid
Showy Orchid
Umbrella Leaf
Five species Trillium

Recommended seasons: Month of May, especially May
10-20. Make reservations early since May is
a busy month.

Suggestions: Good walking shoes. Can drive to
trail. Trail is about 1.5 mi. long and
takes about 90 minutes. Rest stops along
way. No restroom facilities.

Other nearby areas of interest: Daniel Boone
native garden, Blue Ridge Parkway with
camping and picnic tables at Price Park.

Food and Lodging: 14 miles to Boone or West
Jefferson.

Contributed by: F. Ray Derrick



to Wilkesboro

FURTHER NOTES ON THE CREEPING BLUEBERRIES

by

William Benson Kirkman
Department of Horticultural Science
North Carolina State University
Raleigh, NC 27695-7609

I. 'Wells' Delight' is now 'Wells Delight'

Although originally approved for release as 'Wells' Delight,' we are publishing the name as 'Wells Delight' to avoid future confusion. The former name (with the apostrophe) is grammatically correct, but has been misread to become any of the following: 'Wells,' 'Delight,' 'Well's Delight,' 'Wells' Delight,' and 'Wells Delight.' Dr. Ballington and I quickly realized that the apostrophe was the cause of the confusion. Therefore, upon publication of the official descriptions in HortScience and registration with the International Registrar for Nonassigned Woody Genera at Longwood Gardens, Kennett Square, PA, the name will be permanently *Vaccinium crassifolium* 'Wells Delight' (without the apostrophe). I believe Dr. Wells would forgive this transgression.

II. Requests for cultural information and availability of plants.

Upon completion of my dissertation, I plan to write a summary version of our observations, cultural recommendations, and our current knowledge on prevention and treatment of potential diseases. I will make this available for publication in the NCWFPA Newsletter along with a listing of nurseries that purchased stock plants in 1984.

A NEW BOOK ON PROPAGATING WILD FLOWERS

Growing and Propagating Wild Flowers, by Garden curator Harry Phillips, will be published this spring by the University of North Carolina Press. Major contributions to the project were made by curators Rob Gardner and Charlotte Jones-Roe; the over 200 illustrations in the book are by Program Coordinator, Dot Wilbur; Garden Director Dr. C. Ritchie Bell and Assistant Director Ken Moore edited the final manuscript, enhancing the book's content considerably by adding much useful information; curator Alan Johnson and Assistant Propagator Janie Leonard Bryan gave generously of their time in the preparation of certain sections. We were fortunate to work with David Perry, editor at UNC Press, to guide us over the rough spots. David is a long time supporter of the Botanical Garden; curiously, he now plans to use some of the wild flowers discussed in the book in his own garden. Soft cover editions will be available in local bookstores and at the Garden in late April.

What inspired the book were chiefly three things. First, our commitment to the "Conservation through Propagation" concept whereby the Garden conducts ongoing research into refining practical propagation techniques for many native southeastern plant species. This ongoing program enables us to pass along our findings to home gardeners and nurseries and suggests an effective alternative to using wild dug plants in our gardens. Second, motivation came from the efforts of members of the North Carolina Wild Flower Preservation Society, especially past president Tom Shinn, who learned to propagate many of our more "difficult" wild flowers. He, Julie Moore, and other Society members were responsible for the publication North Carolina Native Plant Propagation Handbook, a volume which served as an excellent model for our book. Third, the work of the Wednesday morning propagation volunteers over the last five to six years has been vital to the Garden's native plant conservation focus. Our volunteers are largely responsible for conducting an annual Wild Flower Sale where in excess of 1500 plants are produced for each sale. Volunteers also process much

of the uncleaned seed brought to the Garden during the summer and fall months. Cleaned seed is then available for our production needs here at the Garden and for distribution to members, nurseries, garden clubs and other botanical institutions throughout the world. Thus, this aspect of our outreach program--disseminating propagated plants and native plant seed--has expanded because of volunteer input.

During its writing, every attempt was made to keep the book's language understandable, the techniques simple and straightforward. The home gardener, sans greenhouse or other elaborate structures and equipment, is at the very heart of the book. We hope it will prove helpful in your gardening endeavors and look forward to your comments and suggestions for improvement.

* * * * *

NEW PUBLICATIONS

A Guide to Salt Marsh Plants Common to North Carolina by Elizabeth Jean Wilson, a natural science curator at Hampton Mariners Museum. The publication is available for \$1.50 from the UNC Sea Grant College Program, 105 1911 Building, North Carolina State University, Raleigh, NC 27695. It is also available at the North Carolina Marine Resources Centers and the Mariners Museum.

Jeannie has been a contributor to the Newsletter. She is now Jean Wilson Kraus and lives in Beaufort.

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Nursery Sources For Native Plants

Gardening enthusiasts throughout the United States can create a garden of wild flowers and other plants native to their region. The New England Wild Flower Society has published a 53-page guide to Nursery Sources, Native Plants and Wild Flowers. This booklet lists and supplies information about 193 nurseries in every region of the country except Alaska and Hawaii.

To order send \$3.50 (includes postage/handling) to New England Wild Flower Society, Dept. NS, Garden in the Woods, Hemenway Road, Framingham, MA 01701.

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SCHOLARSHIP PROGRAM

The NCWFPS Scholarship Fund was established several years ago. Interest from a special account was to be used in funding student research projects related to native plant propagation (seeds, cuttings, cell, tissue, or organ culture), nutrition, distribution, environmental requirements, diversity, conservation, and ecology. At the present time the Fund has about \$600.00 available each year. We welcome your gifts to this program.

At the February 16, 1985, meeting of the Board we approved the first two recipients of the Scholarship Program:

1. Mr. John T. Soule, Biology Department, University of North Carolina at Charlotte, will study "The Pollination Biology and Fruiting of Xanthorhiza simplicissima Marshall." The study is part of a larger project "Mecklenburg Flora" now being carried out at UNCC. The faculty advisors are Professors J. F. Matthews and T. L. Mellichamp.

2. Mr. John D. Penkacik, Department of Horticultural Science, North Carolina State University, Raleigh, will study "Interrelationship of Soil Fumigants and Mycorrhizae on Seed Germination and Seedling Development of Ornamental Tree Species." The research advisor is Professor V. P. Bonaminio.

At the conclusion of their studies a report will be submitted to the NCWFPS. If possible, the recipients will be invited to attend one of our general meetings to make a presentation to the members.

Members of the Scholarship Committee are Tom Howard, T. L. Mellichamp, and G. R. Noggle.

COUNTY MAP BOOKS

Maps are now available for North Carolina and several other states which provide essential information of interest to field botanists. For North Carolina there are maps of the 100 counties containing road numbers, mileage, rivers, major creeks, mountains, elevations, cities, and towns. Also included is information of historical and geographic interest. The maps are 11" x 16" and bound so as to provide ready access.

The North Carolina map is available for \$10.90 from County Maps, 300 Buck Jones Road, Raleigh, NC 27606. Maps of Florida, Indiana, Kentucky, Michigan, Ohio, Pennsylvania, South Carolina, Tennessee, and Wisconsin may be obtained for \$10.90 from County Maps, Puetz Place, Syndon Station, WI 53944.

CONFERENCE ON LANDSCAPING WITH NATIVE PLANTS

The Tennessee Valley Authority (TVA) in cooperation with Western Carolina University and the North Carolina State Museum of Natural History in Raleigh will hold the 1985 Conference on Landscaping with Native Plants July 25 to 27 at Western Carolina University in Cullowhee, North Carolina. The conference last year was very successful and had an attendance of around 125.

You are invited to attend the conference and present a poster or mount a display. Contact any of the sponsoring institutions for details: TVA, Norris, TN, 37828; Western Carolina University, Cullowhee, NC 28723; NC Museum of Natural History, Raleigh, NC 27602.

MINUTES OF THE FALL MEETING

3 November 1984

The meeting was held in the University Room of the NCSU Faculty Club, Raleigh, following a social hour and dinner attended by forty people. It was preceeded by an interesting and amusing slide show, "Botany, Birds, Bogs, and Backyards," by Kerry Givens. He closed his presentation with a spirited playing of Scott Joplin's "Maple Leaf Rag."

The meeting was called to order by the President, Ray Noggle, who thanked Tom Howard for leading the morning walk at Eno River State Park. He also thanked Ed Steffek, who was the leader of the afternoon walk at Duke Gardens. Other walks include ones at the North Carolina Botanical Garden, and at the North Carolina State University Arboretum.

The Treasurer, Gretchen Cozart, reported \$1901.68 in the regular Account and 6708.52 in the Scholarship Fund. Sales of the Plant Propagation Handbook have brought in \$401.00. The Fund will provide a scholarship of \$600.00 to \$800.00 annually. One application has been received.

Harry Phillips reported the success of obtaining seed of butterfly weed for the Seed Exchange Program. Hundreds of pods were sent in. He thanked the members and announced that he had 150 plants to distribute after the meeting.

Julie Moore suggested that members send to the Society headquarters at Totten Center accounts of places they like to visit, so that a directory for the State can be made. She distributed a sample outline that may be used. A copy of the sheet is attached to the minutes. Tom Howard suggested that it be published in the Newsletter.

The President announced that the 1985 spring meeting will be held on a week-end from the first to the middle of April in Rockingham County and called on Floyd Rich of Reidsville to give details. He told of plans for a visit to a Triassic Basin with fossils and a dinosaur track and a dam watershed, a slide program on brickmaking, and dinner at a cafeteria.

Jean Steward requested that \$140.00 rather than \$40.00 be deposited to the credit of the society at the Post Office to avoid mailing delays. The Treasurer was so instructed.

The meeting adjourned.

Respectfully submitted,



Secretary pro tem

* * * * *

PHLOX stolonifera 'Bruce's White' - NEW

This splendid white-flowering selection of a native species is a real eye-catcher and conversation piece in our own garden. Originally discovered along the North Carolina-Tennessee border by Mrs. Thomas (Bruce) Shinn, for whom it is named, its large snow-white flower heads appear prolificly in late April and early May above the creeping foliage. Each flower is highlighted by a prominent yellow eye. Easy to grow in any well drained soil insun or light shade, it is equally valuable as a ground cover or edging plant. Truly an outstanding Wayside Introduction. Sometimes called 'Arlene' - Zones 3-8.

The above appeared in the Spring 1985 Wayside Gardens catalogue, with a lovely color photograph.

BOARD MEETING MINUTES

The Executive Board meeting of the NC Wild Flower Preservation Society was held at noon on February 16, 1985, at the NC Botanical Garden. President Ray Noggle presided over the meeting.

Reports

Treasurer Gretchen Cozart reported a balance of \$1,735.81 in the regular account and a balance of \$6,863.34 in the scholarship fund.

Plans for the spring membership meeting were presented by Floyd Rich who suggested a tour to the Mayo River to see igneous dikes, waterfalls, and rare plants, a trip to see dinosaur tracks and other fossils, and trips to the Rocky Branch and Cedder Mt. Nature Preserves. The meeting will be April 12th-14th.

Harry Phillips told the board that the seed exchange pamphlet was ready to mail to members and he still wished feedback. Julie Moore suggested Harry design a questionnaire to be included in a newsletter so members could give him the information he desired.

Harry also reported that the NC Botanical Garden prints a list of the seeds and spores collected from plants grown at the garden or collected naturally. This list, *Index Seminum*, is exchanged with other botanical gardens across the US and internationally. Any society member interested in obtaining indexes or seeds collected in other states/countries should write to him at the botanical garden.

Ray Noggle informed the board that the scholarship committee had approved two recipients, and they were to be funded as follows:

1. John T. Soule of UNC-Charlotte is to receive \$200 to study the pollination and fruiting of *Xanthorhiza simplicissima*.

2. John D. Penkacik of NCSU is to receive \$500 to study the interrelationship of soil fumigants and mycorrhizae on seed development of ornamental tree species. Both men are to write a report and present their findings at a future society meeting.

Julie Moore reported members were responding to the request for descriptions of areas of interest for wild flower enthusiasts. She presented an outline to be followed and asked that it be included in a future newsletter. She concluded that the society should consider compiling these descriptions into a handbook similar to the propagation handbook.

Bob Conners, president of Friends of State Parks, asked the society to endorse the STATE PARKS NOW! Campaign. He explained that the campaign was designed to educate the public and legislators about the need for state park funding. The board voted to endorse it.

The last business item was presented by Ken Moore. He requested that society members write to him at the gardens if they know of any area in the Piedmont where *Trillium erectum* or its varieties grow. He needs this information for a friend who is doing research.

After Ken spoke, Ray Noggle adjourned the meeting.

Respectfully submitted,



Elvira Howard

* * * * *

All Nature seems at work. Slugs leave their lair--
The bees are stirring--birds are on the wing--
And Winter slumbering in the open air,
Wears on his smiling face a dream of Spring!
Samuel Taylor Coleridge
1772-1834

SPRING WEEKEND

The spring week-end, co-sponsored by the N.C.W.P.S. and the Rockingham County Naturalists' Club, was held in Eden and Rockingham County April 12 - 14.

Friday night started with greetings from Ray Noggle and Floyd Rich, presidents of the N.C.W.P.S. and R.C.N.C. This was followed by my slide presentation of representative flora and fauna of the area. Displays included rocks and field guides. Olivia Rich, Sara McCollum, and friends served refreshments.

Although Saturday was threatened by much needed rain, it turned out to be a beautiful day. Some chose to accompany the morning excursion to the Mayo River, while others went first on an archeological trek to an area quarry.

The Mayo trip began as a pleasant ride through rural Rockingham County and in and out of Virginia. Several of the cars we met pulled off the road in response to our apparent funereal procession. Our destination was William Byrd's dividing line between North Carolina and Virginia. Upon arrival there, we met Jamie Smith, this trail's guide, and took off into the woods. Negotiating wire fences and proceeding along an old road bed, we passed a mat of Round Leaved Pyrola which proved a precursor to the treats ahead. Despite the dry weather, the flora surpassed expectations. We meandered with the Mayo and saw many of the igneous rock formations that make this river so desirable to canoeists.

The group then left the river and followed a tributary past a spectacular waterfall at the old DeShazo Mill site. This brought us back to the gravel road where we began, and to our cars. As we crossed the bridge, we viewed a rock vee-shaped Indian fish trap, dating from about 1300 A.D. A front yard, partially covered with Birdfoot Violets, included both the single and bicolored varieties. The last stop was a much needed picnic on Mayo Becah in sight of the beautiful rock garden formation--a perfect location for a state park.

After lunch it was prehistoric reptiles, dinosaur footprints, and concrete blocks. Milton Hundley led a

caravan to the Rockingham County Solite Plant. Shale is mined here for use in the manufacture of lightweight concrete blocks. Sixty-nine complete fossilized specimens of the "solite reptile" were discovered at this site, along with numerous insects and plant fossils. Most of these fossils are being studied and displayed around the country. Some of the fossils were on hand along with artists' reconstructions for our examination.

Someone said "MORE" and about half the crew agreed to an impromptu trip along the Smith River, led by Julie Moore and Tom Howard. This part of the Smith lazily worked its way over rock formations, which spanned the river's width, yielding an enormous cataract. The rocks on shore were also spectacular and dotted with Saxifrage, Columbine, and ferns.

Saturday night's banquet agenda included a social hour and a plant exchange. Harry Phillips brought Horsemint, Cardinal Flower, and Silky Grass from the Botanical Garden. Other specimens came from N.C.W.P.S. members. Craft exhibits were by Sara McCollum and Gertie Tanner. The business meeting included a call to action for N.C. State Parks. (Find out more from Bill Holman, 922 Wimbleton Drive, Raleigh, NC 27612.) Bob Carter presented a summary of Rockingham County history. Emily Bowen supplied an update on the City of Eden. Floyd Rich took us through geological time to the present with a slide show. He explained the triassic basin on which Eden sits. He also had pictures of an albino bluebird.

Seven A.M. Sunday was take-off time for an added trip to Henry County, Virginia, to see Twinleaf along the Smith River. Ten A.M. and it's back for a hike at "Bear Slide," led by Bob Futrell and R.C.N.C. members, again, along the Smith River. This ten-acre Natural Heritage area has outcroppings of shale and triassic basin sedimentary rocks, as well as unusual plant life.

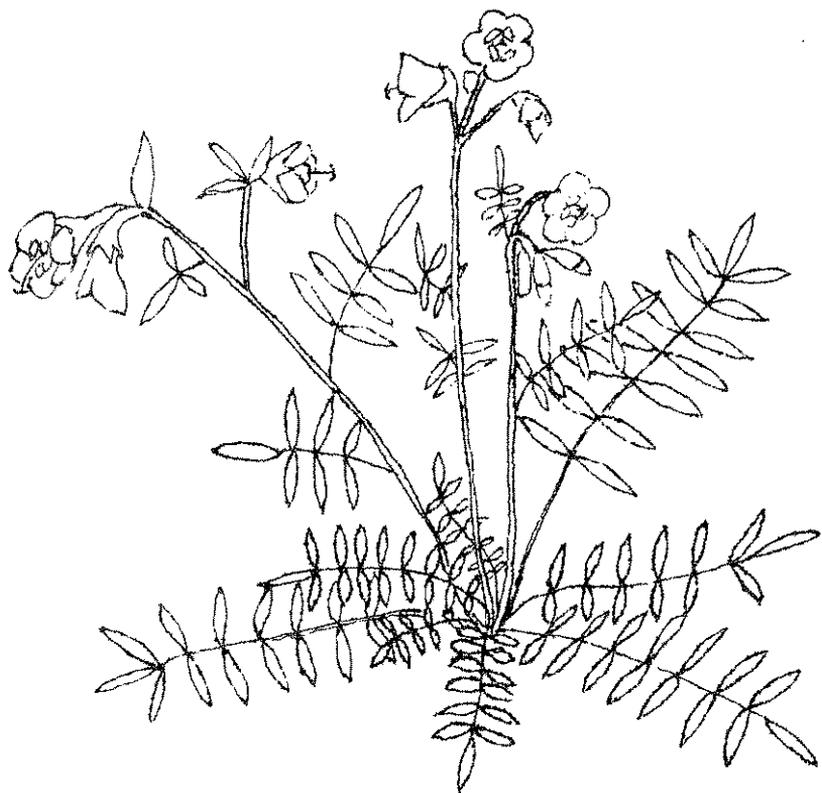
Most of us said good-bye at Gertie Tanner's Wildflower Garden, where we were amazed to find a dwarf, pink, four-petaled *Trillium grandiflorum*. However, others set out on still another hike, this time looking for Leatherwood.

Bob Tuggle

WE WELCOME THE FOLLOWING NEW MEMBERS

Aurnad, Mr. Len 921 Trailwood Dr. Raleigh, N. C. 27606	Jolls, Ms. Claudia L. Dept. of Biology, East Carolina Univ. Greenville, N. C. 27834
Barringer, Mr. Frank M. P. O. Box 375 Sanford, N. C. 27330	Lake, Ms. Susie 1910 Chatham Avenue Charlotte, N. C. 28205
Baker, Mrs. Mildred 714 Churchill Dr. Chapel Hill, N. C. 27514	McInnes, Mrs. R. C. 1020 W. Peace St. F-6 Raleigh, N. C. 27605
Bodner, Ms. Hazel C. 105 Allison Way Cary, N. C. 27511	Stephenson, Mrs. Annie T. 1405 Quail Court Roanoke Rapids, N. C. 27870
Bryan, Mrs. Louise M. 3335 Alleghany Dr. Raleigh, N. C. 27609	Teismann, Ms. Rebacca 3524 Chelsea Dr. Rocky Mount, N. C. 27801
Derrick, Dr. F. Ray Dept. of Biology, A.S.U. Boone, N. C. 28605	Tuggle, Mr. James R. 903 N. Daniels Creek Road Collinsville, Va. 24078
Dilatush, Mr. Tom 780 Route 130 Robbinsville, New Jersey 08691	Wood, Mrs. Kenneth L. Route 1, Box 82 Robbinsville, N. C. 28771
Eastwood, Mrs. A. M. 9 Anchorage Way Barrington, R. I. 02806	Hansens, Mr. Elton J. 110 Old Kanuga Place Hendersonville, N. C. 28739
Fagg, Miss Karen 2209 Park Road, Apt. 2 Charlotte, N. C. 28203	Roma Philip 3025 Pleasant Ridge Road Summerfield, N.C. 27358
Fredrickson, Mr. and Mrs. James 724 N. Peace Haven Road Winston-Salem, N. C. 27104	New Address: Dr. and Mrs. Herbert Hechenbleikner 9300 Sandburg Avenue Charlotte, N. C. 28213
Illman, Ms. Florence W. Route 1, Box 334-C East Road Walnut Cover, N. C. 27052	
Painter, Mrs. Mary M., President Virginia Wildflower Preservation Society P. O. Box 849 Annandale, VA 22003	

JACOB'S LADDER
Polemonium Van-Bruntiae



Drawing by Bob Tuggle

NOTES

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



900 WEST NASH STREET

WILSON, NORTH CAROLINA 27803

NORTH CAROLINA WILD FLOWER PRESERVATION SOCIETY, INC.

Mrs. S.M. Coxart, Treasurer

900 West Nash Street

Wilson, North Carolina 27893

MEMBERSHIP APPLICATION

Regular: \$5.00

Sustaining: \$25.00

Life: \$100.00

New

Renewal

NAME _____

ADDRESS _____

CITY _____

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

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