

NORTH CAROLINA *wild flower* PRESERVATION SOCIETY, INC.



Graminoids

SPRING 1994  
Volume VI, Number 1 N.S.

**NORTH CAROLINA WILD FLOWER  
PRESERVATION SOCIETY, INCORPORATED**

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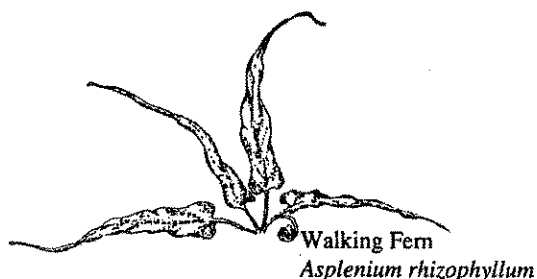
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**NEWSLETTER**  
of  
**North Carolina Wild Flower Preservation Society**

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Cover: *Graminoids*, by Carol Miller, NC Botanical Garden volunteer, copied from cover of Chapel Hill Garden Club Yearbook.



**Editors' Note –**

Ed Swab has written about the real problems involved in publishing a Newsletter of high quality. The editor of this issue will not presume to establish new procedures for the new editor. However, she will ask contributors to follow Ed's example in submitting articles that have been proof read and proof read again, in being willing to use new technology, should such be desired by the new editor, and, most importantly, in being willing to respond to the editor's questions very, very promptly.

## PRESIDENT'S MESSAGE

As my tenure as NCWFPS President winds down, I must take a few moments for reflection and questioning. I am grateful for the privilege of serving and for the support of my many friends in the Society. Most of all, I am grateful for the foresight of the organizers of the Society in designating that once a member has served as president, that person becomes a permanent member of the board of directors. The product of that provision in the Bylaws insures continuity in the leadership of the Society and makes the transition of officers easier.

I have relied heavily on the former presidents. They have contributed to the Society in many ways, contributing their ideas and serving as sounding boards for me – particularly Emily Allen, Tom Howard, Ken Moore, Ray Noggle, Eleanor Pegg, and Jean Stewart. They have all served in multiple capacities, serving on committees and supporting so many of our activities, helping organize and lead outings, working with the distribution and republication of the *Propagation Handbook*, assisting with the Shinn Fund, helping maintain our strong ties to the Botanical Garden, keeping me informed on important activities, helping me with answers to technical questions posed in our correspondence, serving as historians, helping with the *Newsletter* and our mailings, and maintaining our mailing list.

These are among the individuals who have guided me, and I hope to be equally helpful to our new president and board. Perhaps it's unfair to single them out when so many other former and current officers and trustees, as well as individual members, have helped, but I do so to point out these resources to new and potential leaders in the Society. None of the tasks is overwhelming if you take advantage of the help that is freely given. I dare say that none of us has ever fully utilized the full resources available within the Society, however.

It is even more exhilarating when other members of the Society step forward to help at any level. Remember, as a volunteer organization, we are totally dependent on the efforts of volunteers. One of the easiest places for any member to contribute is our *Newsletter*. We have been blessed with excellent leadership over the years, and our *Newsletter* has been acclaimed in many circles. Members with writing or artistic skills should consider submitting material for possible inclusion. Not everything submitted can and will be used, but our excellent staff should not have to constantly search for new material. Members can suggest potential authors or topics; many of our best articles have come that way. In addition, members can and should suggest "local outings" or events for publication in the calendar. Finally, members with editorial skills and experience should let the editor know and offer their services.

I must also comment on another transition for the Society. Our *Newsletter* Editor, Jane Welshmer, has announced that she is stepping down this spring. In the tradition of her predecessors, she will continue to be a resource for her replacement, which should make for an easier transition. As I have said many times before, we should all express our appreciation to Jane and all others who

have contributed so much to our *Newsletter*. Our editor and our treasurer are truly the glue that holds us together, and our Nominating Committee will strive to find a worthy replacement for Jane. If you have suggestions or questions, call (or write) Jane or me – and don't forget to thank Jane for a job well done. Finally, as Jane would quickly add, don't forget to thank those who have helped her.

In closing, I would like to personally thank all of those who have served with me, especially former treasurer, Gretchen Cozart, and current treasurer, Nancy Julian. In addition, I would like to thank my wife, Adrianna Kirkman, who has been so valuable to me as corresponding secretary and as fill-in for our recording secretary. Finally, I would like all those who have helped our vice presidents, Eric Hawkins and Nancy Hillmer, and myself plan and lead our spring and fall outings, the other glue that holds us together. Among those many individuals, Harry LeGrand has been a mainstay of knowledge and guidance in recent years.

And to our membership – know who your officers and board members are, thank them, and offer to help. Better yet, get involved; contact the nominating committee, participate in one of our standing committees, or visit a board meeting (all meetings are open to the membership). Recruit new members and bring them to our meetings – share the fun of our Society.



Benson Kirkman

The Wildflower Society notes with sadness  
the sudden loss of Bob Welshmer on February 2.

“Once they are gone, the trees, the grasslands, the screaming waterfowl, the beavers and the antelopes, we can only remember them with longing. We are not God. We cannot make America over again as it was in the beginning, but we can come to what is left of our heritage with a patriot's reverence.”

– Donald Culross Peattie

## 1994 CALENDAR

### NCWFPS EVENTS

**March 20, 2 PM**

First Day of Spring Hike at Rock Cliff Farm, the retirement home of ecologist/botanist B.W. Wells on Falls Lake. Come enjoy the fruits of recent trail work, scenic views, and spring wildflowers as well as an update on activities to "turn a dream into reality." Led by Benson Kirkman; contact Falls Lake State Recreation Area to register (919) 676-1027).

**April 23-24**

Spring General Meeting and Elections; Uwharrie Mountains, lodging headquarters in Asheboro; sites include Black Ankle Bog (TNC holding), Uwharrie Gamelands Rich Slopes, Biles Mountain, and other unusual communities and rare plant habitats.

\*Copies of Dr. Jim Troyer's biography of Dr. B.W. Wells, *Nature's Champion: B.W. Wells, Tar Heel Ecologist*, will be available for members to purchase at a reduction from list price at our Spring Meeting; selling price is \$21 (tax included). The small profit from sale of the books will go into the Shinn Scholarship/Grant Fund.

**April 27-May 15**

Wildflowers of North Carolina by Virginia R. Weiler, outdoor photographer at Erl Originals, 380 Knollwood, Winston-Salem. Reception 4:30 to 7:30, 4/27. Most of pictures taken in Emily Allen's garden.

**July 2-4**

Eno River Festival, Durham

**July 20-23**

Landscaping with Native Plants Conference, Cullowhee; contact Sue Deitz, Div. of Continuing Education & Summer School, Western Carolina Univ., Cullowhee, NC 28723-9018.

**August 26-27**

Eastern Native Plant Alliance Annual Meeting, Winterthur Museum & Gardens, Winterthur, Delaware; contact Benson Kirkman for details.

**September 24-25**

Fall General Meeting; Unexplored and lesser-known areas around Crowders Mountain State Park and South Mountains State Park. Lodging headquarters in Gastonia.

## LOCAL EVENTS

### Triangle Area

**March 6, 27, April 9<sup>1</sup>** Native Plant Landscaping Workshops at Margaret Reid's Wildflower Garden in Raleigh (see article on Reid conservation easement in previous *Newsletter*). \$6.00 for TLC members; \$8.00 for nonmembers<sup>2</sup>. Contact Benson Kirkman (919-859-1187) to register or for questions.

**March 5, 26<sup>1</sup>** Martin Marietta Raleigh-Durham Quarry Plant Rescues. \$12.00 for TLC members; \$15.00 for nonmembers<sup>2</sup>. Christmas fern, ebony spleenwort, heartleaf, hepatica, foamflower, partridge berry, dwarf iris, running cedar, rattlesnake plantain orchid, and many other native wildflowers, shrubs and trees suitable for transplanting. Experienced advice and guidance along with a tour of the quarry's award-winning Preservation Garden included. Contact Benson Kirkman (919-859-1187) to register or for questions.

<sup>1</sup> Special group workshops (maximum 12 participants per group) and rescues (maximum 25 participants per group) available by arrangement with Benson Kirkman.

<sup>2</sup> All proceeds from these events go into the Willis Alton and Margaret Baker Reid Stewardship Fund endowment.



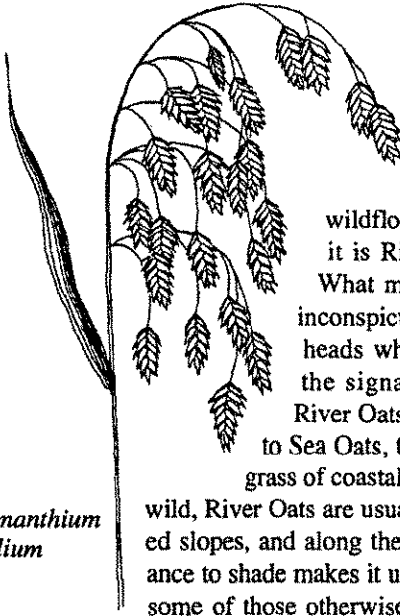
Tulip Poplar  
Liriodendron Tulipifera

If you keep a green branch in your heart, a bird will surely light on it and sing.

— James Dickey from *Deliverance*

**RIVER OATS  
SELECTED AS  
1994 WILDFLOWER  
OF THE YEAR**

*Chasmanthium latifolium*



*Chasmanthium  
latifolium*

This year we have selected a wildflower that will surprise many gardeners; it is River Oats, *Chasmanthium latifolium*. What makes it so different? The flowers are inconspicuous, it's the gracefully arching seed heads which develop in late summer that are the signature of this beautiful native grass. River Oats are reminiscent of and closely related to Sea Oats, that familiar and aesthetically pleasing grass of coastal dunes from Virginia to Florida. In the wild, River Oats are usually seen growing in low woods, shaded slopes, and along the edges of rivers and streams. A tolerance to shade makes it useful in the home garden to help fill in some of those otherwise difficult shady spots. Planting River

Oats in groups of three to five create a full rounded effect and show off the seed heads to their best advantage. They are equally well grown in sunnier spots provided they don't get excessively dry.

River Oats grow three feet tall and have many lance-shaped leaves  $\frac{3}{4}$  of an inch wide that arch from delicate erect stems. The flattened aggregate seed heads are an inch long and about half that wide. Each plant bears a great number of these pendulous heads on thread-like stems. Starting in late summer, they turn from an apple green to a rich tawny color. Three or four stems placed in a vase make a very artistic arrangement. River Oats are also a unique and graceful addition to a mixed arrangement of cut flowers.

The North Carolina Wildflower of the Year Program now in its thirteenth year, is a cooperative conservation program of the Garden Club of North Carolina, Inc. and the North Carolina Botanical Garden. We are very pleased to be partners with the Garden Club of North Carolina, Inc. with this long-running and unique effort. Over the years, tens of thousands of Wildflower of the Year brochures have been distributed throughout North Carolina, the Southeast and beyond.

To request a descriptive brochure containing seeds of the 1994 North Carolina Wildflower of the Year, River Oats, send a stamped, self-addressed, business size envelope with your request to:

N.C. WFOY 1994

N.C. Botanical Garden • CB# 3375, Totten Center

University of North Carolina • Chapel Hill, NC 27599-3375

Distribution began in January of 1994.

*Rob Gardner  
N.C. Botanical Garden*



## GRAMINOIDS - THE BASICS FOR SIMPLE RECOGNITION

The "graminoids" in North Carolina consist of three plant families: POACEAE or GRAMINEAE, the grasses, with approximately 93 genera: CYPERACEAE, the sedges, with approximately 17 genera: and JUNCACEAE, the rushes, with two genera. These three families are found throughout the state and in nearly all habitats and plant communities, although some are more restricted than others.

Generally speaking, grasses are the most important. POACEAE is the third largest family in the Kingdom Plantae after ORCHIDACEAE (orchids) and ASTERACEAE (composites or daisies), but the most dominant ecologically and by far the most important economically. Food for humans may be considered one of their greatest values. Think about these grasses: sugar cane, wheat, rice, maize (corn), barley, sorghum, oats, rye, millet, and bamboo. (Did you know these were all grasses?) The first four are in consecutive order of rank of world food production in 1989!! On this same list, barley was number seven, and sorghum, number 13. Some products from these grasses include flour, breads, pasta, cakes, cookies, crackers, pretzels, breakfast cereals, popcorn, molasses, sugar, and corn oil. Secondary products are numerous, although alcohol (fermented and/or distilled) is probably best known. Bamboos are a minor food product, but are important building materials and are utilized in many other ways. Grasses make music (reeds for clarinets), help sweep the house (brooms), catch supper (fishing poles), grace our gardens (ornamentals), and provide a soft layer to playing fields. Some grass grains are grown as animal feeds from which we derive beef (and other meats), milk, butter, cheese, hides, wool, and eggs. Out on the range, the forage of most domestic and many wild herbivores is grass. Grasses are the principal component in about 20% of the earth's vegetation, and are dominant in steppes, prairies, and savannas. The East African savanna ecosystem that supports the huge number of wildebeast, zebras, gazelles, and other animals, has humble grasses at its base. Gaze out a window into any neighborhood and what do you see? Lawns. Lawns are either monocultures or mixtures of several species of grass. (But if your "lawn" is like mine, there are lots of mosses and plenty of other herbs.) It would be great fun to see how many species of grass (or other graminoids) would appear over a growing season *sans* cutting. Look along the edges of the woods, on highway banks, in power lines, pastures, meadows, wet ditches and marshes. More grasses and graminoids. What about the salt marshes along the coast or the plants binding the dunes against the constant wind? Right, more grasses. Binding soil, growing dunes, slowing water flow in wetlands, providing homes for insects, spiders, and countless other creatures and food for wildlife, and generally providing the earth with a soft, green mantle, grasses are plants that deserve our attention, appreciation, and thanks. Without them, we could not exist. And when we no longer exist in living form, grass normally covers our final resting places!

Sedges are more restricted in their distribution than grasses, "preferring" areas higher in moisture. They are more likely to be found in damp roadside ditches, pond edges, and in saturated soil. Of course, there are exceptions, but I'm sticking with generalities. Economically, sedges are relatively unimportant. They have been used to make one of the first papers (papyrus), in mat- and basket-making, as hay or straw, thatching, perfume, etc. A few have edible parts, for example the Chinese water chestnut. One society of Bolivians on Lake Titicaca float the lake on, make houses out of, and eat, a species of Scirpus. Environmentally, sedges are prominent and important in wetlands.

Rushes are by far the smallest of our three graminoid families with only two genera. The woodrushes (Luzula) are early spring plants mainly of woodlands. The other rushes (Juncus) are more numerous, with habitats ranging from granitic balds to woodlands, to coastal saltmarshes. Seemingly more numerous in damp locations, these plants are mostly found in freshwater, although black needle rush is found only in salt marshes. They are of little economic value although they can be used for basket weaving, mat-making, chair bottoms, and roofing thatch.

There are some basic morphological differences that can be used to distinguish these three families. Boiled down to a basic four-lined ditty they are:

Sedges have edges,	(stems are [usually] three-angled)
Rushes are round,	(stems are round and smooth)
Grasses have nodes,	(swellings at the base of the leaf sheath)
And much abound.	(the most numerous)

Remember, this is a generalization that works most of the time, but it must be coupled with close and careful **observation**. With careful examination of the plant at hand, you will get the right family most of the time! (I expect to hear this chant coursing through the air on the next outing, probably delightfully *ad nauseum*). Start looking at these plants now – many persist throughout the winter. There are many more distinguishing features we can use to help in our identification of these three families that will come in future articles.

– Edward C. Swab

## SPRING SOJOURN AT STONE MOUNTAIN

(Editor's note: This article is a corrected version of an article in the Fall, 1993 Newsletter, which contained some botanical terminology errors – for which the editor apologizes.)

Fine weather, enthusiastic members, beautiful scenery, and lovely late spring flowers all converged at the spring Wild Flower Preservation Society meeting at Stone Mountain State Park on May 15-16, 1993. Although the meeting had headquarters at the Comfort Inn in Elkin some miles away, nothing dampened the spirits of the large number of participants once in the field.

On Saturday, May 15, the Society had the help and expertise of Vaughn McGrady, former staff member, and his daughter Robin McGrady, former Seasonal Naturalist, of Stone Mountain Park. Jack Greene, Western District Interpretation and Education Specialist for the Division of Parks and Recreation, and Bob Tuggle, Benson Kirkman, Eric Hawkins, and Craig Moretz became leaders as the group hiked up, over, and around Wolf Rock and Cedar Rock. Because of the large turnout, the group was divided and hiked from opposite ends of the trail, meeting and exchanging leaders at Wolf Rock.

The granitic domes with their large size were a sight to behold in addition to the fantastic views of the surrounding countryside from the outcrops. A closer look at the rock, with its potholes, rivulets, exfoliation grooves and pockets, revealed the subtle process of primary succession on bare rock. Lichens of different colors could be observed, along with the blackish moss *Grimmia*. On the edges of depressions where rock detritus, plant materials, and moisture collect, Greenland Sandwort (*Minuartia* = [*Arenaria*] *groenlandica*) at its peak, Pineweed (a St. John's Wort) (*Hypericum gentianoides*), False Dandelion (*Krigia*), Panic Grass (*Panicum*), Fescue (*Festuca*), and other herbs were found. Where the soil was somewhat deeper, were Shrubby St. John's Wort (*Hypericum prolificum*), Eastern Red Cedar (*Juniperus virginiana*), Virginia Pine (*Pinus virginiana*), and Rock Chestnut Oak (*Quercus montanus* = *Q. prinus*). The endangered Keever's Bristle Moss (*Orthotrichum keeverae*) was found and examined from one of the trees listed above. Needle Grass (*Stipa avenacea*), was common and very lovely in the Cedar Rock area, giving a soft grassland-like appearance to the fringes of the rocks and trail sides. Janice Swab, while responding to a question about mosses, entered her lecture mode and gave one group a well-received mini-lecture concerning their life cycle. Although the rocks were beautiful, they were heating up and the cool shade of the dry oak-hickory forest was welcomed.

From the rocks we adjourned to lower elevation and some refreshing stream-side shade for our picnic lunch. After lunch the hikers headed for Garden Creek Natural Area. There was some uncertainty concerning where the trail was, but the faithful flock followed fearless flower finders forward finding fabulous flora. Bushwhacking is a fine way to become intimate with many plant characteristics and properties. Many interesting things were seen including one large concentra-

tion of May-apples (*Podophyllum peltatum*), but no really outstanding species. One memorable event was the writer's demonstration of a *Peziza* (a cup fungus) "puffing." Just opposite the Garden Creek Baptist Church was a small population of large Jacks-in-the-Pulpit (*Arisaema triphyllum*), one of which had two spathes (pointing toward each other) and over the spadix (the Jack)! None of us had ever seen one like it!

The catered dinner at the Comfort Inn was outstanding - plenty of food, well-prepared, attractive, and the final test, delicious. It was followed by a program by Ed Ingle of the North Carolina Department of Transportation, Roadside Environmental Section, of beautiful slides of roadside flowers and plantings. A long and involved question-and-answer session stimulated much discussion and many ideas.

Sunday's sojourn to the meeting place at Doughton Park proved that many of the Society's members are more adept at reading botanical keys or hiking trails than they are with deciphering tiny road maps and fuzzy photo copies! (I have checked the Sunday schedule and have seen that there was no stated starting time for the Sunday hike; therefore, no one was late.) The huge crowd (it looked HUGE) was divided into several groups with official or newly-drafted leaders. Some of the members in the more advanced (distance-wise) group made numerous stream crossings on their way up toward the Blue Ridge. The intermediate group hiked a bit slower and made fewer crossings, and the last group took in "everything" up to the first major stream crossing. Eric and Tim Hawkins made it to the Showy Orchis (*Orchis spectabilis*) site only to find a few past-flowering plants (maybe it was a bad year for them) but a lot of Adder's Tongue Fern (*Ophioglossum vulgatum* var. *pycnostichum*) in the same area. Bob Tuggle was amazed at the willingness and enthusiasm with which the "senior citizens" took off and put on their shoes many times on this long hike. He also found and carried a snake in his pack until someone was able to identify it (it was a water snake). Benson Kirkman said his group was generally awed by the raw beauty of the site, even without showy displays of flowers. Although many expected wild-flowers were not found, Pink Lady's Slipper (*Cypripedium acaule*), Squawroot (*Conopholis americana*), and Fire Pink (*Silene virginica*) were seen.

This weekend reminded the participants that though what is expected in Nature is not always found, still there is infinite variety in what She has to offer. There was something special for everyone. From strolling in the lush cool woods, or sitting on a liverwort-covered rock with bare feet caressing smooth pebbles, to hearing the streams' soft murmurings from afar, or listening to the sweet song of the wood thrush, no one would argue that the group excelled in enthusiasm and appreciation for this beautiful natural area of North Carolina.

- Edward C. Swab

## GROWING CARNIVOROUS PLANTS AT HOME

by Rob Gardner

We weaved and bobbed our way around the branches intruding into the overgrown footpath leading to the head of the small lake at Camp Tuscarora in Wayne County, North Carolina. I was being shown, for the first time, the "secret" place where the pitcher plants grew. Deer flies and mosquitoes encouraged us to keep moving beneath the sweltering canopy of longleaf pines. Up ahead I heard someone yell, "Here they are!" The pine trees and shrubs thinned out into a small opening. Among the grasses and other herbaceous plants were several very large clumps of purple pitcher plants, *Sarracenia purpurea*. I couldn't believe my eyes! This was the kind of thing you only saw in books! Everyone in our small group was on hands and knees jockeying for position in order to get a better look at these bizarre and beautiful bug-eating plants.

I had always held an interest in nature and had dabbled with the odd spider, salamander, and snake, but this one event held such a fascination for me that my attention has been fixed on these plants, and, indeed, plants in general, for the last 30 years. It also helped lead me to my current position as Curator of Carnivorous Plants at the North Carolina Botanical Garden in Chapel Hill, North Carolina.

Pitcher plants (*Sarracenia* spp.) have evolved the capacity to capture insects by virtue of their tubular leaves. Insects are attracted to the leaves by nectar which is secreted on the underside of the hood and on the throat and rim of the leaf. Ordinarily, we associate nectar with flowers, but this is one of the few cases in which leaves also produce this sweet, viscous fluid, irresistible to many kinds of bugs. As they forage at the top of the leaf, the carnivorous cone-shaped orifice looms below. Its upper interior is lined with a slick plant wax which makes footing difficult. The lower interior is lined with a multitude of stiff, downward-aiming hairs that discourage escape. If a fly, beetle, bee or ant ever has the misfortune to fall into the leaf of a pitcher plant after having been lured by its sweet nectar, its chances of escape are slim. The combination of waxy surface, stiff, downward hairs, and ever-narrowing passage work in concert to prevent any insect's escape. Pitcher plant leaves are able to produce weak enzymatic fluids, as well as take advantage of bacterial decomposition. They can utilize the insects they capture as a kind of fertilizer. Researchers believe pitcher plants have evolved this capacity in response to their native soils which tend to be high in acidity and low in nutrients.

Pitcher plants are easy to grow at home and make fascinating natural history studies, as well as beautiful and unique garden subjects.

The four most important factors to keep in mind when growing pitcher plants are planting mix, moisture, sunlight, and dormancy.

I've experimented extensively with different kinds of potting media for pitcher plants and found that the most satisfactory and available materials are sphagnum peatmoss or whole fiber sphagnum moss. They both fulfill the essential requirements of an acidic medium that is water retentive. Peatmoss is probably

the more economical of the two, especially if you have a large collection or an extensive planting of pitcher plants. Some growers prefer to amend their peat-moss with as much as 50% of coarse perlite and/or coarse vermiculite to provide more structure.

I usually grow my pitcher plants in plastic pots ranging in size from 4-12 inches. Some pots hold individual plants, and others contain small groups. To establish pitcher plants in a more naturalistic setting in your garden, bury a plastic dishpan, window box or other container in a sunny spot. Be sure to drill a few 1/2" holes in the container halfway up the sides. This will allow a reserve of water to remain in the bottom half of the container while allowing the excess to flow through the drainage holes you've drilled on the sides. Leave the rim of the plastic container about 1 or 2 inches above ground level to avoid excess runoff.

Even larger areas can be established for pitcher plants in the home garden by making an excavation about 12 inches deep. Smooth the inside surface of dirt and then line the entire bottom and sides with plastic sheeting. Since the intention of the plastic lining is merely to slow down the dispersal of the moisture it holds and not to hold water like a pool, small punctures or holes are nothing to be concerned with. In fact, it's the kind of slow drainage that these moisture-loving plants need! I have made just this kind of plastic-lined bog at the North Carolina Botanical Garden. It is about 400 feet square. It's lined with 8 mil plastic sheeting and filled with peatmoss. Pitcher plants, sundews, and Venus fly-traps have been thriving in it for 6 years.

I've never killed a pitcher plant from overwatering. They are all adapted to environments with a water table at or just below ground level. Pitcher plants, especially when grown in pots or other artificial environments, are extremely sensitive to drying out. I use plastic plant trays under many of my pots of pitcher plants. This way they always have a reserve of water to draw on, and the routine of daily watering is relieved. I keep the balance of my collection of potted pitcher plants in plastic-lined sub-irrigation beds constructed from 2x4's and plastic sheeting. Always remember: when in doubt, water your pitcher plants!

The third essential factor to provide when growing pitcher plants is sunlight. They are all sun-loving plants. Pitcher plants are adapted to open savannahs, bogs and many other sunny, moist habitats. Sunlight is important in the formation of the tubular leaves that are the hallmark of all pitcher plants. I have placed my collection in an open, sunny field that gets 6-8 hours of sunlight each day during the growing season. One advantage of plants in containers is the ability to move them to different locations as the growing season progresses and patterns of sun and shade change.

It is also important to acknowledge that pitcher plants are hardy perennials. That is to say, they can survive, and indeed require, the dormant period brought on by colder winter temperatures. Allow your plants to go dormant by keeping them outside for the winter. Provide protection by burying pots and dishpans of pitcher plants to the rims in your garden or other sunny spot for the winter. Although almost all species of pitcher plants are native to the southeastern United States, they are hardy to zone 6 with a little winter protection. The one

notable exception is the purple pitcher plant, *Sarracenia purpurea*. It ranges up the eastern seaboard and into Canada. This would be the best choice for colder climates. Monitor them every week or so in the winter until the ground freezes to be sure the medium isn't excessively dry. Even in their dormant stage they must not dry out. Remove containers from the winter site and place in a sunny spot the following spring.

There are many fine hybrids and selected forms of pitcher plants on the market today. They are often showier, more vigorous, and easier to grow than the straight species. When purchasing pitcher plants, always ask to be sure that they are nursery-propagated and not collected from the wild.

I always recommend that you purchase at least three or four plants to begin with. You are still assured of success even if one or two plants fail to do well.

Pitcher plants are easy and satisfying to grow as long as you remember their basic requirements: proper planting mix, moisture, sunlight, and dormancy. Few other plants make quite the same impact in a sunny garden as the bug-eating, tubular leaves of pitcher plants.

*"I went to the woods because I wished to live deliberately, to front only the essential facts of life, and see if I could not learn what it had to teach, and not, when I came to die, discover that I had not lived."*

HENRY DAVID THOREAU

QUOTATION FROM WALDEN

**FERNS IN THE VAN LANDINGHAM GLEN  
AT UNC CHARLOTTE**  
by Dr. Larry Mellichamp  
Director, UNC Botanical Gardens  
Charlotte, North Carolina

The Van Landingham Glen was founded on the young campus of the University of North Carolina at Charlotte in 1966 by biology professor (now emeritus) Dr. Herbert Hechenbleikner. He is well known to many members of the NCWFPS for his dedication to the organization over the years. His idea was to develop a seven acre garden of hybrid rhododendrons (a favorite plant of our benefactor, the late Ralph Van Landingham of Charlotte) within a setting of native plants found in the Carolinas - from the highest mountains down to the edge of the sea. Today we have over 2,000 hybrid rhododendron specimens, representing probably 300 named varieties; all of the native rhododendrons and native azaleas of North America, and many European and Asian ones as well; and some 1,000 species of native trees, shrubs, wildflowers and ferns.

Ferns, and fern allies, were of particular interest to Dr. Heck (as we call him) and we have about 70 species, varieties and hybrids. It is a remarkably complete collection of these natives that are easy to cultivate. We do not have many of the rock-growing *Aspleniums*. Our collection contains some fairly rare types that appear to do well here in the Southeast, such as the Wright's Cliff-brake (*Pellaea X wrightiana*). On the other hand, some of the species from the high mountains do not like our hot summer temperatures. We are especially proud of our *Dryopteris* garden, which includes a duplicate of most of the species and many of the hybrids from the research collection of Dr. W.H. Wagner of the University of Michigan's Matthaei Botanical Garden. This was the collection he put together and used for chromosome and morphological studies for his landmark investigation of the eastern North American *Dryopteris* complex published in 1970. We hope to maintain this planting, arranged in a pattern that places hybrids between parents, as a distinct section in the Glen. If I had to choose one favorite fern for attractiveness and ease of growth, it would be our Southern Hybrid Woodfern, *Dryopteris X australis*, often growing 4' tall and usually semi-evergreen.

We shall certainly continue to seek out, especially from known wild localities, those few species that we do not have from the Carolinas and make an effort to grow them. In some ways we are a test garden, though we do not purport to keep accurate records of successes and failures on a species-by-species case. Since we are growing natives of the Carolinas only - with the exception of members of the *Dryopteris* complex - there should be no question of their hardiness, only of their adaptability to conditions here in the Piedmont region. Our summer temperatures regularly range into the high 90's, with nighttime lows above 70°F in July and August (a situation not liked by northern plants!). In winter, daytime highs are above freezing (with very rare exceptions), frequently mild, though we almost always get down to 20°F several times during the winter, and may expect lows in the teens. We are in the new USDA hardiness zone 7, which means our *theoretical*



average minimum winter temperature is 0°F. Rainfall averages 45" per year, and is fairly evenly spread; but June through September can be quite warm and dry, even though we have numerous thunderstorms. We must be prepared to water regularly in the Glen, which we do using overhead sprinklers. I believe this accounts for the success of many ferns outside this province.

We would definitely be eager to hear from anyone who has species, natural hybrids (especially *Dryopteris*) or wild forms available that would fit into our context.

The following is an alphabetical listing of the species of pteridophytes (ferns and fern-relatives) we have. Almost all of the specimens came from the wild, though we do not necessarily know exactly where for each. Nomenclature follows David B. Lellinger's 1985 book, *A Field Manual of the Ferns & Fern-allies of the U.S. & Canada*.

<i>Adiantum capillis-veneris</i>	<i>Dry. X benedictii</i> (carthusiana x clintoniana)
<i>Adiantum pedatum</i>	<i>Dry. X boottii</i> (intermedia x cristata)
<i>Asplenium platyneuron</i>	<i>Dry. X dowellii</i> (intermedia x clintoniana)
<i>Asplenium rhizophyllum</i>	<i>Dry. X separabilis</i> (intermedia x celsa)
<i>Athyrium felix-femina ssp. asplenioides</i>	<i>Dry. X triploidea</i> (intermedia X carthusiana)
<i>Athyrium pycnocarpon</i>	<i>Dry. X uliginosa</i> (carthusiana x cristata)
<i>Athyrium thelypteroides</i>	<i>Equisetum arvense</i> (invasive)
<i>Botrychium biternatum</i>	<i>Equisetum hyemale var. affine</i> (invasive)
<i>Botrychium dissectum</i>	<i>Isoetes engelmannii</i>
<i>Botrychium virginianum</i>	<i>Lycopodium alopecuroides</i>
<i>Cheilanthes lanosa</i>	<i>Lycopodium appressum</i>
<i>Cheilanthes tomentosa</i>	<i>Lycopodium carolinianum</i>
<i>Cystopteris bulbifera</i>	<i>Lycopodium dendroideum</i>
<i>Cystopteris protrusa</i>	<i>Lycopodium digitatum</i>
<i>Cystopteris tennesseensis</i>	<i>Lycopodium lucidulum</i>
<i>Dennstaedtia punctilobula</i>	<i>Lycopodium obscurum</i>
<i>Dryopteris campyloptera</i>	<i>Lygodium palmatum</i>
<i>Dryopteris carthusiana</i>	<i>Onoclea sensibilis</i>
<i>Dryopteris celsa</i>	<i>Ophioglossum pycnostichum</i>
<i>Dryopteris clintoniana</i>	<i>Osmunda cinnamomea</i>
<i>Dryopteris cristata</i>	<i>Osmunda claytoniana</i>
<i>Dryopteris felix-mas</i>	<i>Osmunda regalis var. spectabilis</i>
<i>Dryopteris goldiana</i>	<i>Pellaea atropurpurea</i>
<i>Dryopteris intermedia</i>	<i>Pellaea X wrightiana</i>
<i>Dryopteris ludoviciana</i>	<i>Polypodium polypodioides</i>
<i>Dryopteris marginalis</i>	<i>Polystichum acrostichoides</i>
<i>Dry. campyloptera x marginalis</i>	<i>Pteridium aquilinum</i>
<i>Dry. celsa x cristata</i>	<i>Selaginella apoda</i>
<i>Dry. celsa x goldiana</i>	<i>Thelypteris hexagonoptera</i>
<i>Dry. clintoniana x goldiana</i>	<i>Thelypteris kunthii</i>
<i>Dry. clintoniana x cristata</i>	<i>Thelypteris noveboracensis</i>
<i>Dry. felix-mas x marginalis</i>	<i>Woodsia obtusa</i>
<i>Dry. intermedia x marginalis</i>	<i>Woodwardia areolata</i>
<i>Dry. X australis</i> (celsa x ludoviciana)	<i>Woodwardia virginica</i>

The Van Landingham Glen is part of the UNC Charlotte Botanical Garden, which also includes the Susie Harwood Ornamentals Garden and the McMillan Greenhouse and rain forest Conservatory. The outdoor gardens are open for visitors seven days a week during daylight hours. For further inquiries, descriptive brochures or information about our Gardens Associates Newsletter, please write the Director, UNCC Botanical Gardens, Biology Department, University of North Carolina at Charlotte, Charlotte, NC 28223.

*I stooped and picked a leaf of fern,  
And recollected I might learn  
how many myriad sorts  
Of fern exist,  
Each as distinct and beautiful  
As this.*

*Robert Browning*

**"A TRUE CLASSIC BY  
ONE OF AMERICA'S  
MOST PERCEPTIVE  
NATURE WRITERS."  
ROGER TORY PETERSON**

## **FROM LAUREL HILL TO SILER'S BOG**

The Walking Adventures  
of a Naturalist by  
John K. Terres

New Introduction by  
Peter S. White

With an Afterword by  
the Author

Illustrations by  
Charles L. Ripper

*John Burroughs Medal for  
Distinguished Nature Writing, 1971*

"We are caught up at once in [Terres's] passionate interest and follow him gladly . . . Because this book is a work of art we are held in its spell in a timeless world."

— May Sarton, *New York Times Book Review*

*From Laurel Hill to Siler's Bog*, originally published in 1969, presents the fruits of a scientific as well as affectionate association between a dedicated naturalist and the birds, mammals, and insects of a small, wild world. John Terres, noted author and former editor-in-chief of *Audubon* magazine, spent nine years exploring the Mason Farm Biological Reserve in Chapel Hill, North Carolina. His observations of the animal and plant life around him are eloquently recorded here, organized around the cycle of a year from January through December. In an afterword written for this edition, Terres reflects on his return to the Mason Farm after twenty-five years and the changes that have taken place there.

John K. Terres recently retired to Chapel Hill. Among the best known of his many books are *Songbirds in Your Garden* and the *Audubon Encyclopedia of North American Birds*.

## **A CHAPEL HILL BOOK**

**THE UNIVERSITY OF NORTH CAROLINA PRESS**  
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## NCWFPS BOARD MEETING MINUTES (August 15, 1993)

The meeting was held at the Welshmer's home in Winston-Salem after a potluck lunch, President Benson Kirkman presiding. Attendance: Eric Hawkins, Nancy Julian, Adrianna Kirkman, Jane Welshmer, Emily Allen, Ray and Ruth Noggle, Jean Stewart, Bob Tuggle, and Charlotte Patterson.

President Kirkman welcomed Charlotte Patterson as a new trustee elected at the Spring meeting. Minutes of the previous board meeting were approved without objection.

A brief discussion of the *Newsletter* followed, led by Editor Jane Welshmer and Benson Kirkman. Jane Welshmer asked board members to solicit timely articles and calendar items, and reminded members of the August 15 and January 15 deadlines. Treasurer Nancy Julian and Benson Kirkman reviewed the list of complimentary subscriptions sent to libraries and other societies.

Nancy Julian announced that the membership list had been purged of anyone who was delinquent on dues for two years and had not responded to renewal notices. The list of dropped names was read out loud and passed around for review by the board. Without objection, the updated membership list was approved. Nancy Julian then reviewed the status of the Society's accounts, reporting that we should remain solvent with our current dues. The board authorized the treasurer and president to make appropriate contributions to the NC Botanical Garden for handling our mailings and to renew/continue memberships in other organizations at established rates.

A discussion of the Society's policy of periodically publishing our membership directory in the *Newsletter* was inconclusive. Benson Kirkman announced that there has been concern raised about improper use of our mailing list by businesses or other organizations. One suggestion was that we send the membership directly out with meeting notices, since the *Newsletter* is available in several libraries, allowing easy access to anyone. The meeting notices are not generally sent to the libraries. The board decided it would be appropriate to raise the issue with the membership at the Spring General Meeting.

Benson Kirkman reminded the board that elections would be held at the Spring 1994 General Meeting, and that he absolutely could not be a candidate for reelection. He then appointed a Nominating Committee of himself as chair, Eric Hawkins, Craig Moretz, and Emily Allen. The committee requested that all board members and the general membership assist with nominations.

The Fall General Meeting (Outer Banks) was briefly discussed, as well as the 1994 Spring General Meeting (Uwharrie Mountains). Harry LeGrand is helping with planning and logistics for both meetings, and Benson Kirkman was asked to convey the board's gratitude. Benson Kirkman and Vice President Eric Hawkins, Program/Meeting Chair, announced that the long-range schedule for meetings that was prepared several years ago was about to run out. The last outing on the list was one including the Crowders Mountain/South Mountains area. Consensus was that this would be appropriate for fall 1994.

Progress on the republication of the *NC Native Plant Propagation Handbook* and *The Natural Gardens of North Carolina* was briefly discussed. Immediate Past President Ray Noggle asked to turn over the publications account to Benson Kirkman. Copies of Dr. Jim Troyer's biography of Dr. B.W. Wells, *Nature's Champion: B.W. Wells, Tar Heel Ecologist*, were passed around, and Benson Kirkman announced that the UNC Press had offered to sell the book to the Society at a quantity discount. The board agreed to purchase a supply and offer them to members at a reduction from list price with the small profit going into the Shinn Fund.

Local outings were again discussed, and Jane Welshmer and Benson Kirkman pleaded with members to send in suitable items for the *Newsletter*. They noted that items from the Triangle Land Conservancy calendar are often included (such as workshops at the Margaret Reid's Garden and plant rescues), but that other parts of the state should also be represented. Members could also submit brief reports of special events around the state.

Benson Kirkman reported that the society continually gets invitations to participate with a booth at conferences (such as at Cullowhee) and festivals, but that we must have volunteers to be able to do so. He has done several, along with other volunteers. The board decided that this should be discussed with the membership at the 1994 Spring Meeting/Election. Everyone agreed that this was an effective way of recruiting new members, especially functions such as the Cullowhee Conference.

After a brief discussion led by Benson Kirkman, the board unanimously agreed to endorse the State Parks Bond Referendum, and to authorize Benson to continue lobbying for passage of the Senator J.K. Sherron's State Parks Fund/Parks Authority bill (SB 733). The board also agreed to do everything possible to encourage the membership to support both efforts.

The meeting was adjourned at 3:00 PM for a guided tour of former NCWFPS President Emily Allen's garden.

– Adrianna G. Kirkman  
Acting Recording Secretary

## PLANT RESCUE AND LOCAL OUTING NETWORKING - VOLUNTEER OPPORTUNITIES

In recent months, several members have revived the idea of local outings and even more specifically plant rescues. All of us are aware of the continuing loss of habitat for many plant and animal species, as well as entire communities and ecosystems. Our Society was founded by individuals with that foresight over fifty years ago, but they also believed that man can live in harmony with nature, if, as B.W. Wells might say, we apply common sense and ecology to all our thinking and activities.

Preservation of habitat is the first option, and we have been active on that front, but perpetual public education is vital to any effort. Plant rescues should be considered a last resort and may have only limited success, but they are also a vital part of any overall conservation effort. Many of our members have been active in rescues for years and have been very successful. Some of the knowledge they have gained is in our *NC Native Plant Propagation Handbook* and other publications. Properly publicized rescues can also be important in our public education efforts.

One of our members who has been active in rescues and other volunteer efforts recently asked if the Society could become more active for forming a "rescue information network." She proposed that members might contact board members or someone else to get the word out to our members about rescue efforts/needs; the Society might offer our experience and leadership for rescues. The Society should explore this idea as a part of our mission and discuss it at our Spring Meeting. In the meantime, look at your membership roster, and think about contacting nearby members if you know about rescue efforts in your area.

Examples of other opportunities are listed below (*Contact Benson Kirkman* for more information):

1. Several Society members have participated in the Reid Workshops and Martin Marietta Plant Rescues, and many of the leader are members of the Society. Additional leaders are needed so that additional workshops and rescues can be offered, broadening the opportunities for public enjoyment and education.
2. A small group of volunteers meets Wednesday evenings when days are long enough, or on weekends and other suitable days otherwise, to help with maintenance at Margaret Reid's garden. Experienced leaders guide volunteers as they learn about successes and failures in rescues, weed [pests such as Japanese honeysuckle, English ivy, and Japanese "miserable" grass (*Microstegium vimineum*)], transplant and rescue escaping seedlings of bloodroot, toad trillium, and other jewels (volunteers usually get goodies to take home), maintain trails, work compost, and many other tasks.
3. North Carolina State University is beginning construction this spring on its new Entertainment and Sports Area adjacent to Carter-Finley Stadium in Raleigh. Benson Kirkman has been asked to lead rescue efforts in the disturbed area; many of the rescued plants will be transplanted to the relocated Loblolly Trail (part of Raleigh's Capital Area Greenway System) along Richland Creek.

## EDITOR'S NOTE – LYTHRUM UPDATE

A report on *Lythrum salicaria* appeared in the Fall 1993 Newsletter. We asked for advice based on the knowledge and experiences of readers and received several very interesting letters. The first two were from Admiral Donald G. Barr of McLean, VA and Sheryan Chester of Newport, NC.

They sent copies of plant descriptions from several nurseries:

**White Flower Farm:** "A native species, *Lythrum salicaria*, is widely established in wetlands in many northern states, sometimes proliferating to the point where it chokes out less aggressive native species. For this reason many states have embarked on eradication programs and prohibit the sale of Lythrums. We entirely respect these efforts but are persuaded that the vast populations of wild plants already in place will almost surely overwhelm any local efforts aimed at control. These circumstances are not, in our view, occasion for excluding *Lythrum* from all gardens, though it seems **prudent to encourage prompt deadheading. The varieties we offer are self-sterile hybrids selected in Canada for vigor and rich color. They can and will interbreed with local populations if not deadheaded.**" This description is from their 1990 catalog. (The bold print is ours.) Their 1993 catalog lists two varieties but have eliminated Morden's Pink. The others still carry the same warning.

**Andrew Viette Nursery** lists: "Morden's Pink – long-lived. Long-lived with roots in water." No warning.

**Carroll Gardens** lists four varieties with no warnings.

### The Latest on Loosestrife

The Eurasian purple loosestrife, *Lythrum salicaria*, is a plant that environmental groups point to when they argue for laws banning exotic plants.

All *Lythrum* species and cultivars are banned in Minnesota, where the plant has taken over wetlands, displacing both native plants and the animals for which they provided food and shelter.

The nursery industry has protested the ban, arguing that the cultivars are sterile and pose no danger of spreading. However, recent studies by two University of Minnesota horticultural scientists hint that the cultivars can cross with *L. salicaria*,

and could as a result evolve into even more invasive weeds.

Researchers Peter Ascher and Neil Anderson crossed 17 loosestrife cultivars with the species and found that they set as many or more seeds than the wild species and produced fertile offspring. If by chance a garden cultivar – usually crosses of the Eurasian *L. virgatum* and the American native winged loosestrife, *L. alatum* – were to cross with *L. salicaria*, the results could be plants that are as fertile as the purple loosestrife but able to grow in drier conditions, as the winged loosestrife does.



Purple Loosestrife  
*Lythrum salicaria*

**A STEP IN THE RIGHT DIRECTION, BUT  
NO TIME TO REST ON OUR LAURELS**

**Reported by Benson Kirkman**

Last fall voters passed the 1993 State Parks Bond with flying colors – without a doubt a monumental day for the future of our State Parks System. However, the \$35 million in the bond pack will only make a dent in the over \$200 million in documented needs of the system.

The next and very vital step is passage of the State Parks Authority/State Parks Fund legislation (SB 733/HB 1332). As recounted in the last *Newsletter*, this legislation would restore funding to its original destination before it was diverted in the recent budget crisis. The sustained funding would increase support for the Recreation and Natural Heritage Trust fund, remove State Parks from “pork barrel” funding by providing continuing funding for maintenance and capital improvement as well as additional land acquisition not covered by the Trust Fund, and replace lost Federal Land and Water Conservation Fund dollars to support local parks and recreation.

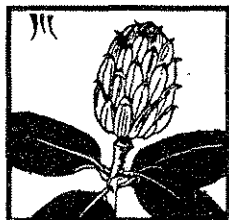
Essentially the legislation is hung up in the House after passing by a large margin in the Senate. *Write or call your State Representative as well as Speaker of the House Dan Blue and Representative Martin Nesbitt, two key players in the House in support of this landmark legislation. Home addresses for Blue and Nesbitt follow:*

Speaker Dan Blue  
4917 Long Point Court  
Raleigh, NC 27604

Rep. Martin Nesbitt  
6 Maple Ridge Lane  
Asheville, NC 28806







## NORTH CAROLINA WILD FLOWER PRESERVATION SOCIETY, INC.

### Aims & Objectives

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

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

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

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

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

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

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

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## MEMBERSHIP APPLICATION

### ANNUAL DUES:

Individual or Family: \$15.00  
Sustaining: \$25.00  
Lifetime Membership: \$180.00

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

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Address \_\_\_\_\_

City \_\_\_\_\_

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

New  Renewal

*Please send this and all address  
corrections to:*

*North Carolina Wild Flower  
Preservation Society, Inc.*

*Miss Nancy C. Julian  
1933 Gaston Street*

*Winston-Salem, NC 27103-3733*

*Please include your added four digit  
zip number to your address in your  
dues payment.*

*It will soon be mandatory.*



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Mr. Tom Howard .....	1982-84
Dr. G. Ray Noggle .....	1984-88

Editor Emeritus.....Mrs. W.T. Lamm

*The above are permanent advisors and members of the board of directors.*



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