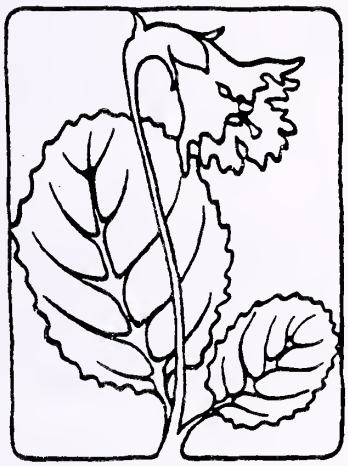
SHORTIA

NEWSLETTER OF THE
WESTERN CAROLINA BOTANICAL CLUB

SPRING 1989



DOROTHY RATHMANN, Editor

FROM THE PRESIDENT'S DESK.....Bill Verduin

Let me tell you about the Rosy Periwinkle. Some of you who are members of the Nature Conservancy may remember reading about it, but it's a story that bears repeating. No, I'll not tell it after all -- I'll let Larry Morse, Chief Botanist for the Conservancy, tell it:

> "For thousands of years, the natives of the island of Madagascar used it in their folk medicine. But modern physicians simply laughed it off as yet another example of witchcraft.
>
> If the Rosy Periwinkle had become extinct before 1960, nobody outside of Madagascar would have missed it very much. But about 25 years ago, scientists discovered that this strange and beautiful plant did indeed have magical properties. A drug called vincristine was extracted from the plant. And this drug completely revolutionized the treatment of childhood leukemia.
>
> Before the discovery of vincristine, leukemia was almost always fatal in children. But thanks to the Rosy Periwinkle, kids attacked by leukemia now have a 95 percent chance of remission!
>
> Actually, the case of the Rosy Periwinkle is not so strange, after all. Plants and animals long thought to be 'useless' are constantly acquiring new applications in medicine, science, agriculture and industry. It's amazing how fast things go from 'useless' to 'priceless.' Look at the useless fungus called 'Penicillium,' for example."

The Nature Conservancy is not buying beautiful natural areas which can be preserved and maintained as places for the public to enjoy. In fact, many of their preserves are closed, or open to only very limited use. They are buying and protecting areas of biological diversity containing threatened or endangered species and eco-systems. Nearly three and a half million acres are now under Conservancy protection.

Twenty five percent of the pharmaceuticals in use in this country today contain ingredients originally derived from wild plants. Peter Raven, Director of the Missouri Botanical Garden is quoted in a recent TIME magazine article as predicting that a hundred species of plant and animal life will become extinct every <u>day</u> during the next three decades! How many Rosy Periwinkles? How many hundred Rosy Periwinkles?

This business of preserving the snail darter, muhly grass and beakrush sedges -- the whole gene pool now in existence -- is serious business -- deadly serious! I urge you to join and support generously the Nature Conservancy. You may be protecting another Rosy Periwinkle.

Send at least $15 to The Nature Conservancy, Membership Processing Center, Dept. 79181, Baltimore, MD 21279-0181.

OFFICERS FOR 1989.....Elton Hansens

PRESIDENT, BILL VERDUIN: WCBC will continue to enjoy Bill's leadership with his tremendous knowledge of our area, his interest in all aspects of the natural world, his ready wit and easy manner. He will continue leading us into new and old botanical areas. Don't be surprised if we see a waterfall now and then. They are his particular passion.

VICE PRESIDENT, LOUISE FORESMAN: Louise is always there to help. Her cheerful manner and helpfulness have stimulated a number of nicknames. Ask how she came to be known as "super bum." It is botanical.

SECRETARY, CHARLOTTE CARMAN: With one business meeting each year and few other duties Charlotte will have time to continue to lead hikes for several groups and engage in all of her many other interests.

TREASURER, JOHN SABY: John is a research physicist who, in retirement, has expanded his interest in gardening and botany. He is an efficient treasurer and has served WCBC well for the past year.

RECORDER: GRACE RICE was elected Recorder at our Annual Meeting but has now resigned for medical reasons. We are sorry this was necessary.

However, BESSIE SINISH has agreed to serve as Recorder for the rest of 1989. A committee will be formed to assist her.

Bess claims that she is "a girl without a state" and neither is she of foreign birth. Figure that one out! She was born in Washington, DC. She can remember that, at the age of 8, she was climbing in the White Mountains with her godparents. From that time, her interest in botany and plant culture has developed gradually. She attended Wheelock College in Boston and then became a teacher of pupils with dyslexia. I didn't ask her about how she caught Dr. Kenneth Sinish, nor about raising her 3 sons. Bess and Ken moved to Hendersonville in 1979 and since have participated in the WCBC and a wealth of other activities. Much more could be written but this gives the picture. We are confident that she will do a splendid job.

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"Therewith my fate was sealed; for he who has once seen the intimate beauty of nature cannot tear himself away from it again. He must become either a poet or a naturalist and, if his eyes are good and his powers of observation sharp enough, he may well become both." (KING SOLOMON'S RING by Konrad Z. Lorenz)

BON APPÉTIT.....Ruth Mack

No doubt about it -- our recent annual meeting covered all the important business of the year. And that's as it should be. The covered-dish luncheon is the social part of the meeting, and I have been asked to report on that.

Beth Woodlock was the chairman of the luncheon. Beth is a volunteer tutor in the Job Corps program. In October when she attended a learning disability seminar in Charlotte, the banquet tables were decorated with paper flower pots filled with flowers. These had been made by students in a learning disability kindergarten group. After the banquet, she asked and was told these would be discarded. So she appropriated them for our meeting. Good thinking, Beth!

Beth said her committee made her job easier. They were: Bill and Evelyn Ammann, Aline and Elton Hansens, Marian and John Moor, Bill and Evelyn Verduin, and Doris and Al Washburn (Ammann's neighbors who just moved here a few months ago).

I can't remember that we ever acknowledged the excellent cooks we have in our Club. The buffet table groaned with delicious creations of all kinds. Many of these were generous in size, some serving 16-20. I hope you've noticed that quite a few men contribute to our covered-dish gatherings. John Brown brought slices from a "pepper roast" that he had prepared using a special marinade on an eye round cut of beef. After a period of marinating, this was wrapped in foil and oven-roasted. Different -- and very tasty! John Kuhn contributed "Delmonico potatoes", one of the dishes for which he is noted. Harry Logan is known for his originality when it comes to cooking. Today it was a casserole of lima beans, corn and mushrooms in a mushroom sauce.

Barbara Hallowell contributed a fruit-date-nut gelatin salad, which was pleasing to the eye as well as the palate. Calla Bell often brings a sherried (or curried) fruit casserole and it is always a hit. It consists of a combination of 7 or 8 kinds of fruit (varies with the season of the year) steeped in a delicious sauce. Calla graciously gave me her recipe, and I will share it on request.

The dessert table was not to be believed -- pies, cakes, and cookies of all sizes, shapes, and flavors. Al Washburn likes bread pudding, and he said no one ever brings that, so he made one which was served warm. Millie Pearson always brings two chess pies. Millie is a native of this area, and she uses a recipe that has been passed down in her family for generations.

Now that I have acknowledged that we have many excellent cooks in our midst, may I note that it has been rumored that WCBC members are no slouches when it comes to eating. But who notices? Not me!

MEMBERS HONORED AT ANNUAL MEETING.....Tom Hallowell

At the WCBC Annual Meeting on January 20, the Honors Committee recognized specially three members:

MILES PEELE was honored with Life Membership for his generosity in providing a wealth of botanical and general natural history information to Club members. Thanks to his quiet, professional, interesting way and gentle manner, we learn happily and easily.

FRANK BELL was honored with Life Membership for his long-time inspiration to those of all ages in the appreciation and search for knowledge of the natural world and for his genial sharing of his woods and hills with the Botanical Club.

LARRY KENYON was awarded a membership in The Second Wind Hall of Fame for his service to the Schenck Job Corps, The Friends of the Library, his church, the Botanical Club, and other varied community services. The Second Wind Hall of Fame recognizes and emphasizes community activities after retirement using talents developed before and after retirement.

After the Annual Meeting Larry received notice of the award in the back seat of his car while on the way to the doctor to have the case on his broken ankle removed.

Can't you just hear the **peelle** of the **bell** in the **kenyon**?

AN INVITATION FROM FRANK BELL.....Bill Verduin

There are few, if any, better places from which to see the sunset than Frank Bell's deck: And few places with more stimulating conversation than with Frank and Calla. Frank's very kind invitation will make it possible for half a dozen Club members to spend the night of either May 7 or 8 using three bedrooms and the kitchen facilities on the lower floor of Frank's lovely home. The Club will be hiking in Frank's woods on May 8. . .

Be one of the fortunate ones to enjoy this opportunity. Call Larry Kenyon for details and reservations (697-1835).

EXCERPTS FROM RECORDER'S ANNUAL REPORT FOR 1988.....Anne Ulinski

The Botanical Club scheduled 42 hikes this year, five of which were rained out. A total of 670 members attended the 37 hikes which did take place, an average of 18 per hike. The rained-out hikes were Jones Gap, Grandfather Mountain, Frying Pan Gap, the September Buck Spring Nature Trail and the Baxter Creek-Smokies fall hike. The best attended outing was the Shut-in Trail with 35 hikers. The Hardy Souls hike, the 3-day Smokies trip, Chimney Rock Park, and Green Cove each had 32 members attending.

Eleven indoor meetings, including the annual meeting, were scheduled with an average of 66 attending.

There were three workdays: Holmes Educational State Forest, Millie Pearson's Woods and the University Botanical Gardens.

Barbara Hallowell gave a fern workship in August and Bill Verduin and others a workshop on plant relationships in December.....

Remember the gold stars we'd get in school for special effort? Well, here are my gold star awards for this past year:

To Bill Verduin and Elton Hansens for the 3-day trip to the Smokies in April. This well-planned trip was a botanical highlight for many.

To Elisabeth Feil for her two programs: "Introduction to Chimney Rock" on February 19 and the tour of Chimney Rock Park on May 13. Elisabeth introduced us to many unusual botanical species in this cold "micro-climate" area, and she increased our awareness of the importance of habitat.

To those members who volunteered to be leaders or co-leaders for the first time this year and thus increased our roster of available leaders for the future.

To the volunteers who guided at Shinn's Garden during the Spring Wildflower and Bird Pilgrimage, to those who guided children at Lake Powhatan, and to Millie Blaha who kept saying, despite misgivings on the part of some of the guides that yes, they could do it.

In the three years since I have been recorder, I have seen a change in the way we approach plant identification. At one time the emphasis had been on identifying only those plants which were in bloom. We now include in our observations not only the flowering plants but trees, ferns, plants still to bloom, and plants in fruit. One more step in our identification skills would be a greater emphasis on habitat. Walking the trails we might ask ourselves: Are we walking on a north slope? Through hardwood growth? Through a wet area or at an especially high altitude? What plants can we <u>expect</u> to see in these places?

I'd like to thank all of you who have helped me in the last three years. It was Louise Foresman who encouraged me to take the job of recorder, and Millie Blaha who helped me with my lists and showed me how to check the plant identifications in Radford. Everyone helped me on the trail, but when I think back on this past year, I would like to thank especially Dick Smith and Millie Pearson who so willingly shared their knowledge and enthusiasm with me. My message to Grace Rice who succeeds me as recorder is, "Enjoy the challenge."

A WINTER WALK.....Ivan Kuster

Let's take a winter walk through nearby field and woodland before snowfall covers the ground. Who does not enjoy shuffling through the dry leaves? Note the various shapes and colors. The oaks are stiff and leathery in shades of brown, dull maroon, and tawny brown. Maples vary from pale yellow through orange and red as do the red gums. Beech leaves in their golden brown usually hang on firmly until pushed off in spring by the new growth. They brighten the woodland as they glisten in the pale winter sunlight

Peeking through the brown leaf litter are glossy leaves of numerous small evergreen plants. These hardy plants survive the rigors of freezing winter cold with thick waxy coats which cut down on evaporation when water is scarce. They usually have woody stems and grow close to the ground as a protection from the drying winds. It is believed that they are not killed by the frost because water within the cells, which would rupture them if turned to ice crystals, is channeled to the spaces between cells where freezing does less damage. Also the sugar content of the cells is increased, thus lowering the freezing point of the remaining water.

What are these ingenious little plants? Partridgeberry (Mitchella repens) is one common ground cover with its small round opposite leaves on trailing stem. Its bright red berries, often eaten by mice and birds, are formed from paired tubular blossoms in early summer. They are edible, but rather dry and seedy.

Next we find shiny dark pointed leaves with a white mid-vein in a whorl with a short upright stem in the center bearing two or three round seed capsules. This is Spotted Wintergreen or Spotted Pipsissewa (Chimaphila maculata). Another similar Pipsissewa without the white stripe is C. umbellata. Nearby we find small rosettes of pale green with white veins and an occasional dried flower stalk about a foot tall bearing many tiny rounded seed pods tightly spaced along the upper part of the stem. This is Rattlesnake Plantain (Goodyera pubescens), one of our small native orchids.

Along a sloping bank we find numerous rosettes of spatulate shaped leaves varying from dull green to pale maroon which are seedling plants of Robin's Plantain (Erigeron pulchellus).

Now we come upon a large area carpeted with green cedar-like foliage with three to five-inch spikes of yellowish candelabrum. This we call Ground Cedar. It is perhaps our most abundant clubmoss (Lycopodium complanatum). We may also find, in smaller more isolated clumps, another more upright shiny, single stemmed clubmoss called Ground Pine (L. lucidulum). If you were to flick the fruiting stalks in fall and light a match to the spores as they fly out they would explode with a bright flash. In the days before electricity and strobe lights, photographers used "lycopodium powder" for their flash exposures. These spores were also gathered commercially for use in fireworks.

Under Beech trees (Fagus grandifolia) we can usually find a non-evergreen plant looking much like a dried winter weed having no leaves and about ten inches tall. These are Beechdrops (Epifagus virginiana). They have no chlorophyll and so must secure their food in another way -- by becoming parasitic on the roots of the Beech tree.

Another attractive evergreen creeper, usually found on northerly slopes under Rhododendrons, is Trailing Arbutus (Epigaea repens). Its hairy, woody stems and waxy-edged leaves in a rather loose arrangement are a welcome sight. Like a number of other woodland denizens, they are very difficult to transplant because of a mycorrhizal association they depend on to make needed nutrients available.

Often in a similar situation we find the glossy one to three-inch round dark green leaves of Galax (Galax aphylla). The winter sun often changes the green to a beautiful dark red-maroon color. Since we are on a north facing slope we find such shrubs as Rosebay (Rhododendron maximum) and Carolina Rhododendron (R. minus) and Mountain Laurel (Kalmia latifolia), all of which like the cool moist shady exposure.

In a drier warmer more southerly area we find Sweet-shrub (Calycanthus floridus) with its fig-shaped fibrous seed pods containing many small brown bean-like seeds which are poisonous. The stems are very spicy-aromatic, and opposite in arrangement.

Down in a hollow along a brook grows a low arching evergreen shrub with alternate glossy leaves from dark green to maroon red. This is called Leucothoe, Fetterbush or, sometimes, Dog Hobble (Leucothoe axillaris). Up on the drier slopes we may find an upright deciduous form of Fetter-bush (L. recurva) with its three-inch long curving racemes of seed capsules.

Among the ferns we find large clumps of evergreen fronds of Christmas Fern (Polystichum acrostichoides) with its stocking-like shaped pinnae growing on shady slopes. And here on a large rock is a patch of Rock Cap Fern (Polypodium virginianum) with six-inch fronds.

There are many more plants, trees and shrubs which beg our attention as we walk through the woods. And in the meadow are countless dried stems in a maze of fascinating forms such as Goldenrods, Black-eyed Susans, Joe Pye weeds, Yarrow, Queen Anne's Lace, Teasel, Thistles, Peppergrass, Giant Mullein, Milkweeds and many more. A winter walk can capture our imagination and pique our curiosity as well as stimulate our minds. So let's go!

LOOK AGAIN !

Jack-in-the-pulpit (Arisaema triphyllum) gets a lot of attention not only because of its unusual flowers but because of the many variations that occur between individual plants.

These differences can be perplexing. There may be either a single leaf or a pair, each with three leaflets, but the lateral ones might be lobed so as to make it appear that there are five. The spathe may be pale green or striped with green or purplish brown, its tube smooth or fluted, and its hood horizontal or drooping. As might be expected, there is disagreement among taxonomists, some of whom consider the aberrants to be varieties (e.g., atrorubens, pusillum and stewardsonii) of A. triphyllum, while others insist that they should be accorded specific rank.

ARISAEMA TRIPHYLLUM

A question that frequently arises is how to distinguish a male plant from a female--in other words, a Jill from a Jack. (In England the related Cuckoo-pint, Arum maculatum, is also called Lords-and-Ladies; the first part of that name denotes plants with purple stripes, the second the plain green ones.) The only sure way to determine the sex of a Jack-in-the-pulpit is to look at the base of the spadix to see whether it has staminate or pistillate flowers, or both. It is interesting to note that this is one of a very few species in which individuals are capable of changing their sex in response to growing conditions.

Occasionally someone who has heard the name Green Dragon will mistakenly assume that it refers to a green-flowered Jack-in-the-pulpit. It really belongs to Arisaema dracontium, a rarer and even more bizarre plant with more numerous leaflets and an extremely long spadix that extends far beyond the spathe.

A. DRACONTIUM

Dick Smith

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S H O R T I A

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FIRST CLASS

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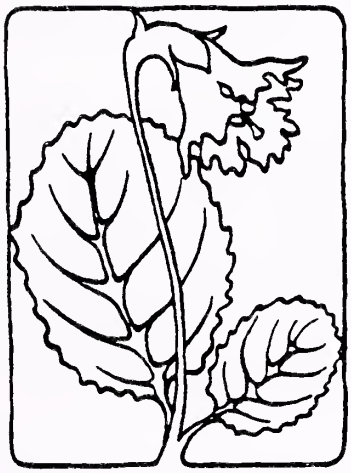
SUMMER 1989



DOROTHY RATHMANN, Editor

OFFICERS

President:	Bill Verduin	Treasurer:	John Saby
Vice President:	Louise Foresman	Recorder:	Bessie Sinish
Secretary:	Charlotte Carman		

FROM THE PRESIDENT'S DESK.....Bill Verduin

Are you a beginner, somewhat overwhelmed by all the names -- both common and Latin -- that you hear on every field trip? Well, names are important -- you don't really know a plant until you can call it by name. So accept the challenge to learn at least a few common names as a starter. C'm'on, you'll have lots of fun.

Start by getting a good field guide. Most of us think Newcomb's Wildflower Guide is the best for our area. The author is Lawrence Newcomb. Your only other tool will be a small hand lens, preferably 10x and convenient to carry.

Spend a little time with the introductory material in Newcomb, preferably sitting out in a field or beside the road where you can find examples of what is pictured and discussed. Try using the key starting on page 1. If it doesn't make much sense try with a different plant, something simple like cinquefoil or sundrops. Keep trying.

Most important is to attend the field trips and to ask questions. One of the best features of our Club is that we have many experienced people who really enjoy sharing what has given them so much pleasure. Don't hesitate to ask questions -- even the same question several times. Sure, a lot of questions may slow down the group but the learning experience is top priority with the Club and must be allowed to set the pace. Note to trip leaders: keep in touch with the end of the line -- if there is teaching and learning taking place, do not pressure them to catch up by getting too far ahead. Share something with those near you, or just wait patiently.

Make every effort to attend the workshops we will have on Plant Families. We are planning these to be of special help to beginners and intermediates. If you can recognize some characteristic common to only one or two families, you have immediately narrowed the area in which to search for a name.

It's a lot of fun -- and if you work at it just a little, you'll be surprised at how soon you, too, will be calling your flower friends by their first names.

ENCORE.....**Ruth Mack**

Are you familiar with the ditty: "Second verse -- same as the first?"

Last year I gave an abbreviated version of the Cade's Cove overnight, and it was filled with superlatives. This is where the ditty comes in. "Second verse -- same as the first." Well ... almost.....

1988	1989
Area visited: Awesome!	Ditto.
Weather: Perfect	Lucked out again.
Flowers: Spectacular! Superabundant!	A tad less in number, but a tad less than super-abundant is more than sufficent.
Lodging: Spacious Each with refrigerator	Ditto.
Participants: Enthusiastic!	Ditto.
Leadership/Organization: Flawless!	Alas, herein lies the rub. EH lost his way, not once -- but twice!

Last year Elton Hansens led us on a "quiet walk." We were instructed not to speak but to use our ears as well as our eyes as we walked. This was repeated this year. We listened to the sounds of the forest -- the stream -- and especially the birds. It was early in the morning, and they put on quite a concert. Some of us walked hand-in-hand. It was a moving experience.

Add to the above the magnificent display of dogwood ('89 was certainly their year) and two glorious sunsets!

Did we enjoy it? You bet! And those who participated wish to thank Bill Verduin (and Evelyn) and Elton Hansens (and Aline) for a job well done ..... again!

ADDITIONS TO 1989 MEMBERSHIP LIST

Hendersonville, NC 28739 unless otherwise indicated

Creely, Beverly Ann, 708 Sylvan Blvd.....697-6534
11101 SW 79th Ave., Miami, FL 33156
*Herbert, Thomas G., Jr., & Miriam
107 Church St., Charleston SC 29401.....
Nelson, Wharton & Wilda, 436 N. Harper Drive.....692-2296
Wagner, Louis, 2601 Highway 64 East, Box 118.....692-8713

* New members.

RECORDER'S REPORT.....Bessie Sinish

Winter is well past. Spring burst out all over and Summer is yet to be.

The winter programs were well attended and gave us a better understanding of fire management in our national parks; informed us that when beautiful plants become troublesome to man or beast, they become weeds. The programs, also, made us aware that the barks of trees as they mature do change their appearance; and they showed us the beautiful flowers of the Bruce Peninsula which juts out into Lake Huron, Toronto, Canada. While anticipating Spring, programs on "Nature's Potpourri", "What are Birds For?" and a trip to the Orchid Greenhouses of the Owen's on Route 64 West helped prepare us for the warm seasons of Nature's great outdoors.

Spring was troublesome -- cold and wet. Many trips had to be cancelled. When seen, the populations of plant colonies were smaller than usual. Was this due to the drought of the last two years, or was it due to the season's slow start?

The Smokies in the Spring! Where else to see, to hear, to smell, to feel the pulse of Nature. Thank you, Bill Verduin, for your enthusiasm, your planning, sharing your expertise and your love for that great world to the west and north of us.

Have you noticed that our WCBC field trips take us to various habitats? Sometimes to wet areas around rivers, streams and springs -- to cold valleys -- under the canopies of evergreen or deciduous forests -- on a Bald -- and to areas with sandy or rocky bottoms. All show a varied group of plants -- each area having its own particular species. As Anne Ulinski pointed out in her annual report, "One more step in our identification skills would be a greater emphasis on habitat."

Now, after a period of ten years and more of recording every flower in bloom on every trip, the recorder with a committee of four members -- Elton Hansens, LaVerne and Bud Pearson, Grace Rice -- have as their objectives:

- to record the rare or unusual flower (and some ferns, trees, lichens and mosses) and large masses of flowers seen on a trip

- to learn of the different habitats visited, paying attention to what grows in each type. For example, an evergreen forest or a bog or an open field.

- to follow the succession of plants during the different seasons by returning to a specified area many times

- to study the importance of plants in the ecological system.

A big challenge! Yet, our field trips are for learning and sharing. Do come, share and learn with us all.

COVE FOREST HABITAT.....Elisabeth Feil

I am willing to bet that any one of us wildflower nuts, when thinking of "woods," conjures up a picture of the cove forest: a lush carpet of herbs on the forest floor in spring, cool shade in summer, a riot of bright colors in fall, and towering trees with mighty trunks in winter.

What is this forest type that stirs our imagination in such a way?

Cove forests occur in the most mesic (moist) valley bottoms and on lower slopes in the Southern Appalachian mountains where they are protected from the drying effects of wind and sun. They are considered to be stable communities, which means they are self-perpetuating. Mature stands are characterized by the presence of all age groups of the dominant tree species.

Most of the cove forests have been cut over for timber with a few notable exceptions that I know of, such as, Joyce Kilmer Memorial Forest and some remote coves in the Smoky Mountain National Park. But even these may not be totally "virgin," because the early settlers often let cattle graze in the woods.

Soils in these forests are rich in organic material and nutrients, and deep even in rocky areas. One reason is that on lower slopes and in valleys, nutrients accumulate that have been leached out of the soils on higher slopes. The richness of the soil is also caused by rapid nutrient cycling. The freshly fallen leaves are quickly broken down by decomposers that thrive in the moist warmth of the soil, so that most of the nutrients are available for use again the next spring.

Deciduous trees are dormant during the winter and do not start their active nutrient uptake until they sprout new leaves in the spring. This is the niche that the spring wildflowers have captured for themselves. These small plants take advantage of the abundance of nutrients in the soil and the sunlight that reaches the forest floor in early spring. Some of them, the true spring ephemerals, have fully completed their yearly life cycle by the time the canopy closes and are then no longer part of the ever-changing scene on the forest floor.

One of the characteristics of the cove forest is the presence of several mesic tree species that share dominance. The most common species of canopy trees are American beech (Fagus grandifolia), basswood (Tilia heterophylla), eastern hemlock (Tsuga canadensis), silverbell (Halesia carolina), sweet birch (Betula lenta), sweet buckeye (Aesculus octandra), white ash (Fraxinus americana), and yellow poplar (Liriodendron tulipfera). Yellow poplar tends to be dominant where the forest has been cut recently.

The understory is open and may include American holly (Ilex opaca), cucumber tree (Magnolia acuminata), dogwood (Cornus florida), hop hornbeam (Ostrya virginiana), red maple (Acer rubrum), and others. There are only a few shrub species growing in the cove forest, which contributes to its open appearance. Spicebush (Lindera benzoin) is the

Individual trees shrubs not indexed

earliest of the shrubs to bloom; alternate-leaved dogwood (Cornus alternifolia), and Viburnum spp., and wild hydrangea (Hydrangea arborescens) follow in late spring and summer, and witch hazel (Hamamelis virginiana) late in the fall. Sometimes along streams under eastern hemlock (Tsuga canadensis), rosebay (Rhododendron maximum), often along with dog hobble (Leucothoe axillarum var. editorum) forms dense thickets that are almost devoid of any herbs.

What makes the cove forest so special for the wildflower enthusiast, however, is the profusion of spring wildflowers. Bloodroot (Sanguinaria canadensis) is the first to create bright spots on the as yet bare forest floor, soon to be followed by a host of others. Among the spring ephemerals are Dutchman's breeches (Dicentra cucullaria), spring beauties (Claytonia spp.), trout lily (Erythronium americanum), and toothworts (Dentaria spp.). Some of the species that need longer to complete their life cycles are blue cohosh (Caulophyllum thalictroides), black cohosh (Cimicifuga racemosa), false goat's beard (Astilbe biternata), Canadian violet (Viola canadensis), sweet cicely (Osmorhiza spp.), trilliums (Trillium spp.), waterleaf (Hydrophyllum spp.), yellow mandarin (Disporum lanuginosum), Solomon's seal (Polygonatum biflorum), Solomon's plume (Smilacina racemosa), foamflower (Tiarella cordifolia), mayapple (Podophyllum peltatum), Jack-in-the-pulpit (Arisaema triphyllum), wild ginger (Asarum canadense), jewel weed (Impatiens spp.), enchanter's nightshade (Circea lutetiana ssp. canadensis), and many others too numerous to list.

Many ferns may be found in the cove forest: Maidenhair fern (Adiantum pedatum), walking fern (Asplenium rhizophyllum), ebony spleenwort (Asplenium platyneuron), maidenhair spleenwort (Asplenium trichomanes), southern lady fern (Athyrium asplenioides), glade fern (Athyrium pycnocarpon), silvery spleenwort (Athyrium thelypterioides), fragile fern (Cystopteris protrusa), shield ferns (Dryopteris spp.), Christmas fern (Polystichum acrostichoides), broad beach fern (Thelypteris hexagonoptera), New York fern (Thelypteris noveboreacensis), blunt-lobed woodsia (Woodsia obtusa), and more.

If we allow ourselves to make a moral pronouncement about nature, we might say that cove forests "deserve" our special love since they have the highest species diversity in our mountains. On the other hand, I am also perfectly content to walk through a spruce-fir forest to look at a carpet of wood sorrel or to slosh through a swamp to admire a single bog-rose.

Ed. Note: This article about the Cove Forest Habitat is the first in a series planned to be written by various Club members, each writing about a different habitat which we might encounter on our field trips. Please give Bill Verduin or me your comments about these articles.

LOOK AGAIN !

At one extreme the Amanitas include the deadliest of all fungi, and at the other some of the most delectable of edible mushrooms. In between, there are others capable of causing nausea, serious illness or hallucination. There are combinations of characters by means of which, theoretically, we should be able to single out the comestible species, but the possible consequences of misidentification should deter amateurs (as they have many professionals) from considering any member of this genus as food.

A. CAESAREA

Caesar's Mushroom (Amanita caesarea) is not only reputed to be delicious but is very beautiful, with a smooth cap gradated from yellow-orange at the striate margin to red-orange toward the domed center. The stalk and its ring, as well as the gills, are a delicate lemon. All this emerges from a snow-white volva which looks very much like half of a broken eggshell.

There is a pretender, however--rarer than Caesar's Mushroom and generally restricted to the Northeast but also found in North Carolina. It is known as Amanita parcivolvata (at one time it was placed in the genus Amanitopsis because of the absence of a ring). Other differences are that the volva is fragile and evanescent, and the cap often carries remnants of the veil in the form of powdery yellowish particles.

A. MUSCARIA

Our only other mushroom approaching these in appearance is the common Fly Agaric (Amanita muscaria). Here the cap may vary in color from straw yellow to cherry red, and bears numerous white velar warts or patches. The other parts also are white, and the only vestiges of the torn volva are several concentric circles of fluffy scales above the bulbous base of the stalk.

Dick Smith

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S H O R T I A

Summer 1989

A quarterly publication of the Western Carolina Botanical Club

Editor: Dorothy Rathmann Distribution: Frances Gadd

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Hendersonville, NC 28739

SHORTIA
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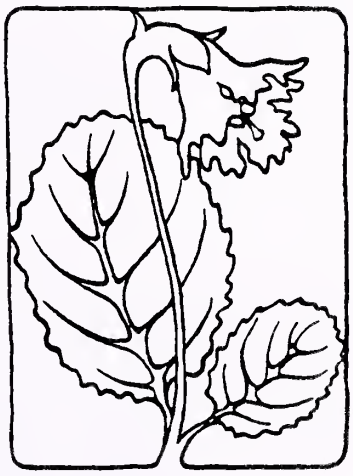
218 Pheasant Run
Hendersonville, NC 28739

FIRST CLASS

SHORTIA

NEWSLETTER OF THE
WESTERN CAROLINA BOTANICAL CLUB

AUTUMN 1989



DOROTHY RATHMANN, Editor

FROM THE PRESIDENT'S DESK.....Bill Verduin

Before the snow flies we will have our fall meeting of the Program Committee. The meeting will plan programs for February through June. These meetings are well-attended, usually ten or more members, and last three or four hours. This is, no doubt, the most important work your officers and leaders do -- and it's not as easy as one might think. We take pains to balance far trips and close in ones, easy walking and more difficult, low elevation areas and high mountains, woodland and more open fields and edges. We must be concerned with ownership and permissions, with adequate parking area, with safety on the roadside and trail. Indoor meetings must be balanced between workshops, educational presentations and entertaining slide shows. We try to balance the interests of the more serious botanists among us and members who just enjoy "smelling the daisies" no matter what they are called. Do we have a job? You bet we do!!

You know what would help us most, don't you? Ideas, reactions, evaluations, preferences, comments, complaints -- just anything at all that would be of some value to us as we try to do our balancing act. We want to plan programs that the most members will enjoy the most. At the same time, we want some programs that will stimulate interest in things botanical at a deeper level than just a name. We want to challenge members to develop a better understanding of such things as plant family relationships, species associations in different habitats, and other such things that will increase your enjoyment whenever and wherever you linger to "smell the daisies."

So speak up! Make your wants and wishes known. We look forward to a lot of input from all of you good members. Program Committee:

Millie Blaha
Charlotte Carman
Louise Foresman
Barbara Hallowell
Elton & Aline Hansens
Ivan Kuster
Harry Logan
Bud & LaVerne Pearson
Lowell Orbison
Don Prentice
Bessie & Ken Sinish
Dick & Jeanne Smith
Ben Tuller
Bill Verduin, Chairman

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*New Member

RECORDER'S REPORT.....Bessie Sinish

Every Botanical Club field trip is an Adventure -- especially this summer for both rain and/or cold weather have helped to either increase the blooms of many shrubs and plants or slowed down the last stages of the flowering plants which, thus, caused fewer blooms or none at all. Meanwhile ferns, lichens, mushrooms flourished under these conditions.

Our field trips took us to many varied environments. Four I would like to emphasize. First: On the Daniel Creek Trail which led us into a cove, a narrow gap running north and south between steep slopes with a stream at the bottom, we came upon a beautiful stand of Maiden Hair fern (Adiantum capillus-veneris) covering an area of approximately 20 by 40 feet. The delicate, freshly washed green of its leaves against the dark wet earth was breathtaking. Yes, this was a rainy trip!

Second: On the trip to Black Camp Gap, a disturbed and open area where there were quantities of flowers, colorful and varied against a blue, blue sky, we found agrimony (both Agrimonia gryposepala and A. parviflora), Monarda didyma and purple and white M. fistulosa, yellow fringed orchis (Habenaria ciliaris), the tall bellflower (Campanula americana) and, rare today but considered a weed yesteryear, butter-and-eggs (Linaria vulgaris) as well as sunflowers, Queen Anne's lace, lilies and many, many more varieties. Pinks, blues, white, yellows, oranges and lavender -- all colors of the rainbow on this a glorious summer day in the Smokies.

Third: For me, one of the greatest adventures was right here in our own backyard -- Jackson Park. We entered Jackson Park through a climax forest of oaks and hickories. Silverbell, fringe trees, dogwoods, blueberry bushes were among those deciduous plants found in the community below the hardwoods. In the third community there were many species of ferns and leaves of flowering plants telling of a Spring past. Down the hill through a pine forest, we came to an open area with black-eyed Susans (Rudbeckia hirta), thistles, etc. Further on in the wet meadows, willows, sycamores, fox grapevines and arrowhead (Saggitaria latifolia var. pubescens) dominated the landscape. Found in and around the pond was the beautiful plant water shield (Brasenia schreberi) and the swamp rose (Rosa palustris). In the Fall the Botanical Club is planning to return to this area. Do come and see this small and unique spot in our own backyard.

Fourth: Close by, high on Pinnacle Mountain above Holmes State Forest is another unique habitat. Here is a dry ridge with rock outcrops giving us some unusual plants, such as, pencil flower (Stylosanthes biflora), fame flower (Talinum teretifolium), fern-leaved false foxglove (Aureolaria pedicularia) and others.

Everywhere we go -- for new members and for all of us -- there are new adventures in seeing, in listening, in appreciating and feeling the joy in closeness to the out-of-doors. A beautiful experience for us all.

WETLAND HABITATS . . . . . Anne Ulinski

Habenaria lacera

Wet land or waste land? In this country in the mid-1800's, the government decided that wetlands were synonymous with waste lands. The Swamp Wetlands Act gave 15 states 65 million acres of wetland for "reclamation" which meant draining the wetlands so that they would be used "more constructively". Of the 215 million acres of wetlands that existed in colonial days, only 99 million acres now remain. In areas of N. C., 66 to 80 percent of wetlands have been destroyed. Now that the attitude toward wetlands is changing, some farmers in the midwest have stopped draining potholes and are allowing them to revert to their original state. Wetland inventories are being taken and legislation passed to protect the wetlands which still exist.

What are wetlands? The U. S. Fish and Wildlife Service which is currently conducting a nationwide inventory of these areas, defines wetlands as areas where water is the primary factor controlling the environment and the associated plant and animal life.

The need for oxygen. Plants in all environments must compete for light, nutrients, water and oxygen. For plants which grow in wet areas, oxygen poses a special problem because oxygen diffuses about 4 times more slowly in water than in air. Upland plants have ample oxygen between the soil particles around their roots but plants with wet feet, whether growing in saturated soil or with roots actually submerged in water, have had to adapt their structures to obtain enough oxygen to survive. Plants growing in fast running water have more oxygen available but they have to develop ways of anchoring themselves so they will not be washed downstream. Luckily for us, many plants have adapted to these special conditions.

Micro-climates and micro-habitats. In western North Carolina, we have no natural lakes, no estuaries, no wide expanses of swamps and marshes. As we focus on habitats this year in our botanical studies, we need to look for "micro-climates" and "micro-habitats" which fit the wetland definition. Our wet micro-habitats or micro-wetlands can be wet rock faces and the tiny bog areas around the base of these rock faces. They can be the ground bordering rivers, streams and waterfalls. There is a small hanging bog near Graveyard Fields and a seepage bog at Pink Beds. In Henderson County there are ponds and a wet meadow at Jackson Park. Millie Pearson is monitoring a wet habitat on her property in Saluda. Pearson's Falls Glen, the wild life preserve also in Saluda, is dominated by the flow of Colt Creek on its way to the Pacolet River. The constant seepage of cold water over the northern exposure of the massive rock cliffs at Chimney Rock provides a home for plants of the Arctic tundra.

Some plants of wet places

which may be found in

our area are listed

on the next page.

In the orchid family (Orchidaceae):

Green adder's mouth	Malaxis unifolia
Green fringed-orchid *	Habenaria lacera
Large rosebud orchid *	Cleistes divaricata
Small green wood-orchid	Habenaria clavellata

In the saxifrage family (Saxifragaceae):

Grass of parnassus *	Parnassia asarifolia
Golden saxifrage, water mat *	Chrysosplenium americanum
Michaux's saxifrage	Saxifraga michauxii
Lettuce saxifrage	Saxifraga micranthidifolia

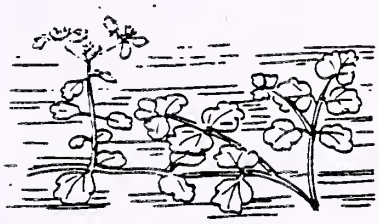
At the ponds and wet meadow at Jackson Park in Henderson County:

Bladderwort	Utricularia gibba
Duck potato	Sagittaria latifolia
Cardinal flower	Lobelia cardinalis
Meadow sweet	Spirea alba
Pickerelweed	Pontederia cordata
Swamp loosestrife	Lysimachia terrestris
Swamp rose	Rosa palustris
Water shield	Brasenia schreberi

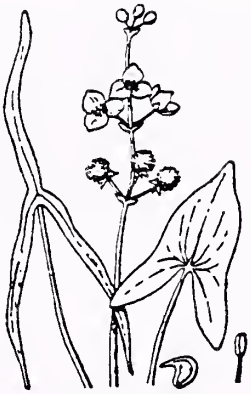
Other plants we see in wet areas:

Black willow	Salix nigra
Canada burnet *	Sanguisorba canadensis
Common or tag alder	Alnus serrulata
Jewelweed	Impatiens capensis
Marsh violet	Viola cucullata
Round-leaf sundew *	Drosera rotundifolia
Umbrella leaf	Diphylleia cymosa
Water hemlock	Cicuta maculata


SMALL WOOD ORCHIS


Water-mat Chrysosplenium americanum


SWAMP ROSE


ARROWHEAD

* Listed as rare in "Manual of the Vascular Flora of the Carolinas" by Radford, Ahles and Bell

NOTES ON THE FRANKLIN TREE, FRANKLINIA ALATAMAHA.....Miles Peelle

Floral tree display in late summer and early fall is seldom spectacular -- in fact, few species bloom that late. The Franklin tree is the exception and well worth attention for its aesthetic and botanical interest. In many gardens this is the main attraction, just before the splendor of leaf color.

The Franklin tree is a curious survivor of habitat loss -- rescued without plan from total extinction. Its range in the Southeastern Georgia lowlands was probably very restricted long before the Bartams discovered it in 1765. The description recorded at that time is as a "curious shrub." Later in 1780 and 1790 William Bartram saw it again in a small area on the northeast side of the Alatamaha River, near the coast of Georgia. Later searches were made, but it has never been found in the wild since then. It is thought that William Bartram planted seeds in the Bartram garden in Philadelphia; trees from the garden were available soon thereafter to spread the trees to many locations.

Strange at it may appear, the tree cannot survive in plantings near its original early Georgia habitat. Perhaps the development since the late 1700's of cotton root rot is the inhibitor of the Franklin tree there. Plantings as far north as Southern Michigan and Massachusetts survive with protection; in the midsouth it does well.

The Franklin tree is a member of the Tea family and is closely related to the redbay (Gordonia lasianthus). Often Franklin trees are called the "Lost Gordonias." In winter the large silky buds protect it during moderate cold snaps. If leaves appear too early in spring, buds elsewhere are in reserve and take over after the basic buds are lost. In fall, leaves are orange to red in contrast to the large white camellia-like flowers. It grows well only in full sun. If you have never seen the lovely flowers in late September or early October, an excursion to Charles Moore's garden in Brevard would be rewarding -- white flowers as large as tea cups, filled with golden stamens!

Recently the Bartrail Association sold 10-14 inch potted seedlings at its annual meeting in Brevard. College Walk residents obtained some specimens, two of which are growing well this season. Perhaps these trees in the future will add to the beauty of the grounds with late summer bloom. [Data from Claire Sawyer "The Franklin Tree" in HORTICULTURE page 64 (July 1989), and W. & M. Duncan TREES OF THE SOUTHEASTERN UNITED STATES (Univ. Ga. Press, pages 195, 309 (1988)].

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As we were completing this issue of SHORTIA Dick Smith told us he has received the first copies of his book, WILD PLANTS OF AMERICA -- A Select Guide for the Naturalist and Traveler. We'll have a review in the next issue. Congratulations, Dick!

LOOK AGAIN !

A number of years ago the conservation department of an eastern State issued a list of plants which it had decided should be accorded statutory protection. Predictably, it included Arethusa, Golden-seal and Green Dragon, but to the surprise of many it also named Celastrus orbiculatus, or Bittersweet. The intent, as they were quick to explain, was to list Celastrus scandens, which is the native vine known as Climbing or American Bittersweet, or Waxwort. Instead, they had inadvertently placed under the protection of law a rampant, destructive escape called Oriental Bittersweet by those anxious to avoid such confusion. To be fair, though, the error is one that is frequently made, and examples are easy to find in the literature.

C. ORBICULATUS

C. orbiculatus was imported in comparatively recent times and cultivated for its colorful fruits, which persist into the winter and are eminently useful in decorative floral arrangements. (Exploitation of the less resilient C. scandens for this purpose was responsible for its disappearance from many localities.) In both species the smooth, yellow, globular capsules develop in early fall from the pistillate flowers, which are greenish and quite inconspicuous. When they mature--and you can induce this by bringing them into a warm house--they split open along three sutures and the segments become reflexed, revealing a shiny, brilliant red aril.

The arrangement of these fruits is diagnostic: In C. orbiculatus they occur in axillary cymes of no more than three, whereas in C. scandens they form a terminal panicle containing many more. Also, the leaves of the introduced species are relatively broader, becoming nearly round (hence the specific name).

Bittersweet vines climb by twining around small trees and holding on in a relentless death-grip. Many a hiker's walking stick is marked by deep spiralling grooves that attest to the struggle between a sapling and a Bittersweet.

Dick Smith

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S H O R T I A

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FIRST CLASS

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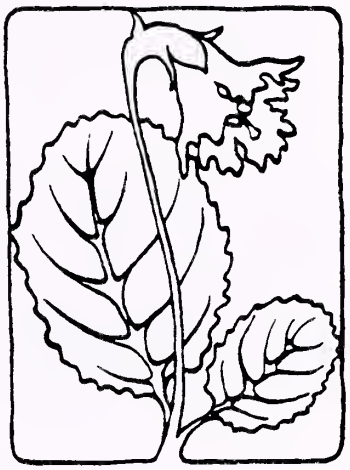
NEWSLETTER OF THE
WESTERN CAROLINA BOTANICAL CLUB

WINTER 1989-90



DOROTHY RATHMANN, Editor

FROM THE PRESIDENT.....Bill Verduin

Remember the Buck Springs Nature Trail we have been hearing about for so long? Beginning to wonder if it would ever get off the ground -- no, I mean on the ground? Well, I'm happy to report a giant step toward completion.

Dick Smith and Elton Hansens had long ago picked 24 "stations" in which to put a numbered post which would relate to text in a guidebook. The Park Service had made the six-by-six posts and they were ready to go into the ground.

Then came the "week that was." On Monday I tagged along with Dick and Elton to a meeting with Park people to iron out last minute details. Tuesday we three plus Tom Hallowell, armed with a probe, searched each general location for a specific spot between the very generous supply of rocks where we could get the post two feet into the ground. Wednesday with the additional assistance of Rudy Henkel, Dean Crawford, Chuck Snow, and Alan Jackson we set the first six posts.

Saturday most all of the above, plus Lowell Orbison, reported for duty bright and early. We were joined by five eager young members of the Brevard College Environmental Awareness group who had volunteered their services. By noon -- would you believe it? -- we had all the posts firmly planted! Dick will now give the text one last once-over and then turn it over to the Park Service for printing.

As far as I know, this is one of the largest community service projects the Club has ever undertaken. And it's a good one. This is a heavily used trail and our contributions will greatly increase the pleasure of the hike for many people. From the minutes of the founding meeting in 1973, one of the purposes of WCBC is "For the education of interested persons in the enjoyment and appreciation of wildflowers and other plants." In this project we are certainly fulfilling one of our purposes.

On behalf of the Club, let me express our thanks to the Brevard young people who provided muscle -- which is in short supply among our membership. And hearty thanks to all the Club members who pitched in when willing hands were needed. But a special word of appreciation to Dick Smith and Elton Hansens who spent many, many more hours on this project than all of the rest of us combined -- and without whom this project would never have been undertaken. Thanks from all of us!

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NEW BOOK REVIEW.....Barbara Hallowell

WILD PLANTS OF AMERICA: A SELECT GUIDE FOR THE NATURALIST AND TRAVELER -- Richard M. Smith; John Wiley & Sons, NY, 1989 (Available from WCBC member Richard M. Smith, $12.95 paperback, $22.95 cloth, or at bookstores.)

If you've been hunting that one handy book which can lead to botanizing hot spots in this wonderful land, STOP! Dick Smith has created it for us with WILD PLANTS OF AMERICA. What good fortune!

Even before reading the book, one is struck by the stunning cactus blossom on its cover and the numerous illustrations scattered throughout its clear-printed pages. Dick, the artist, treats us with drawings not only simple and accurate but artistic. Some even include a little friend who shares habitat with the pictured plant, enriching the effect, even adding a touch of humor (e.g. pp. 43, 100, 128).

The Contents, with chapter subjects titled by geographic region, stirs an active traveler's yen to hop into the car and head for the nearest site. It boosts an armchair traveler's urge to flop into an easy chair with WILD PLANTS OF AMERICA in hand.

Most readers I talked with turned first to familiar places, Chapters 5-9 -- the Smokies, Pisgah National Forest, mountain balds, and trails familiar to WCBC members, then to other places they'd already been.

When you start reading, you find Dick the skilled writer, botanist, psychologist. With concise, beautifully chosen words, he sets you in place in each geological region and creates its mood. You find it irresistable. Then he guides you, giving specific directions, to locations of special botanic interest in that region, telling what to look for. As you journey from cover to cover, you experience a coast to coast botanical trip. You want to return to places you've been to see more. And happily, Dick understands his reader -- he gives enough to inform and entice but not enough to bore.

I asked several readers for comments and heard:

I like the format; a really workable reference book.
It's so readable! Carries you right along. You want more.
I like it as a diary of recollected pleasures.
The answer to people's questions on where to go and what to see.
The choice of words is polished, the phrasing beautifully balanced.
It has not only botany but bits of geology and history.
The drawings are as beautifully and economically executed as the prose.

Readers are sure to carry this indispensable guidebook on trips. Other pluses: Contents of Illustrations, complete index, and listing of Botanic Gardens and Arboretums. Missing: a bibliography.

Dick, congratulations on a beautiful, useful book -- but you've set a precedent! Now Jean and you must travel even more and come up with indispensable Guidebook Vol. II -- even more places for readers to go!

ROCK OUTCROP COMMUNITIES.....Elisabeth Feil

The very words bring back memories:

of the steep cliffs in southern Ontario with a few pines, deep crunchy cushions of reindeer lichen (Cladonia spp.), and beautiful pink lady's slippers (Cypripedium acaule), or the small island with wispy pink corydalis (Corydalis sempervirens) and low blueberry bushes (Vaccinium spp.) with more berries than leaves.

of Heller's blazing star (Liatris helleri), goldenrod (Solidago spithmanea), mountain bluets (Houstonia purpurea var. montana), and lyre-leaved rock cress (Arabis lyrata) on the "Profile" of Grandfather Mountain.

of the leaves of the silverling (Paronychia argyrocoma) on Big Yellow shimmering golden in the setting sun.

of Carey's saxifrage (Saxifrage careyana) on a big rook in the woods below the Chimney Rock cliffs, a thousand pearls glittering in the sun after a shower.

of lobed spleenwort (Asplenium pinnatifidum) in dry cracks on the cliffs across the valley from the "Chimney."

Not two of them are alike. How can I possibly come up with a concise, general essay about rock outcrop communities? So, I guess I just have to stop dreaming and start telling you something about the only cliffs I do know a little about -- Chimney Rock Park.

There is life on the seemingly bare vertical rocks. The black stripes are wet, slick layers of algae. On the light colored areas, many species of lichens exist in a very harsh environment that is dominated by alternating deluges and extreme dryness, great temperature extremes, and high winds. And yes, near the edge of a dry piney forest there is an area covered with reindeer lichen and pink lady's slippers. In another small spot pink corydalis may be found waving in the breeze.

On the more gently sloping, smooth rock faces, thick mats of twisted-hair spikemoss (Selaginella tortipila) are a common sight. The spikemoss got started in succession to mosses and lichens. It has no roots to anchor these mats, and many of them are washed down over the rocks by intense rainstorms. In years with favorable spring weather, some of the spikemoss mats host annuals, such as slender gerardia (Agalinis tenuifolia), ragweed (Ambrosia artemisiifolia), and orange grass or pineweed (Hypericum gentianoides). Others support grasses, ferns like rock cap fern (Polypodium virginianum) and marginal shield fern (Dryopteris marginalis), and more showy flowering plants, like goldenrod (Solidago sp.), beard tongue (Penstemon canescens) and Solomon seal (Polygonatum biflorum). Occasionally, even shrubs or a stunted tree will take hold in one of the mats. Their survival depends on the presence of cracks for anchorage and nutrient uptake.

Due to the geologic forces that put a folded mica schist on top of the massive gneiss cliffs, there is ample seepage on the rocks. This is the reason for the presence of some unusual plant species.

One of them is Biltmore sedge (Carex biltmoreana), a species that just a few years ago was thought to be possibly extirpated. On the steep east side of the mountain, it is an integral part of the herb cover in an area of about 1500 x 300 feet. It also grows on the cold north-facing cliffs in scattered locations. On some of the dripping ledges

and in wet vertical cracks it forms a separate community with ninebark (Physocarpus opulifolius).

Of special interest is deerhair bulrush (Scirpus cespitosus var. callosus), a plant that I have seen in Alaska on permafrost "meadows." In the Park it occupies the most inhospitable, exposed cracks on the vertical cliffs where no other species can compete. Wherever conditions are only marginally better, Biltmore sedge or sometimes mountain dandelion (Krigia montana) share a spot with the deerhair bulrush. The bulrush here is obviously dependent on the seepage on this cliff. Why, then, does it occur along the Parkway below Grandfather Mountain in the same clump with turkey-beard (Xerophyllum asphodeloides), a xeric species?

In another interesting spot on the steep cliffs a wet plant community has developed. Round-leaved sundew (Drosera rotundifolia) is common here at the edge of a mat of Sphagnum spp. and Michaux' saxifrage (Saxifraga michauxii). With increasing depth other typical wetland plants occur, such as sundrops (Oenothera tetragona), cowbane (Oxypolis rigidior), beak rush (Rhynchospora sp.), meadow spikemoss (Selaginella apoda), ladies' tresses (Spiranthes cernuum), lady rue (Thalictrum clavatum), tassel rue (Trautvetteria carolinensis), slender yellow-eyed grass (Xyris torta), green wood orchis (Habenaria clavellata), and others.

And then there are flourishing clumps of small-flowered alumroot (Heuchera parviflora) under an overhang without any apparent water supply.

The diversity even on this relatively small area is so great that I have come to believe that we will never be able to fathom all the intricacies of life -- no matter how smart we may become.

CRAGGIES, THE ENDANGERED GARDEN.....Park Ranger Sue Jennings
Blue Ridge Parkway

The great Craggy Mountains is home to a marvelously rich variety of plants and animals. Recognized for it unique plant communities, 16 of which are listed by the state as endangered plant species, Craggy Gardens scenic area has been designated by the State of North Carolina as a Natural Heritage Area. This area, locally known as the Craggies, includes dramatic rock outcrops, steep rugged mountain peaks rising to 6,000' in height, soft grassy balds with rhododendron thickets adorning the hillsides, valleys dominated by cove hardwoods and virgin hemlocks, and a wide assortment of wildflowers. Just as variable is the weather. Cold, damp, billowing fog can rapidly move in, enshrouding the peaks and domes in an eerie cloak of gray. Violent thunderstorms roll across the mountains, and the bitter winter winds can build a layer of ice more than 10" thick on trees and crowns.

The Craggies are indeed a special place. They are also of significant importance to Parkway Superintendent Gary Everhardt, as the exposed rock outcrops of Craggy pinnacle provide the necessary habitat for a number of rare and endangered plants. Nestled in the crevices and ledges of the rocks, these plants, which may be relics from the last glacial period, struggle to survive. While they are adapted to the extremes of wet and dry, hot and cold, they have no defense against the trampling footsteps of visitors. Like fibers in a worn carpet, the integrity and survival of the rare plant community is being threatened by visitors walking across the rocks and ledges of Craggy pinnacle. Already, a dramatic decline has occurred in the plant populations from trampling.

Part of the problem is that the rare plants do not call attention to themselves. They do not have colorful flowers; they are small in size; and several are mistaken for common grasses. Thus, visitors are not cognizant of the damage they are causing as they leap from one rocky ledge to another. The primary difficulty is associated with a number of unofficial trails that traverse the pinnacle on the south facing slope (just beyond the visitor center). Through the years, a network of these routes has been created by visitors, unaware of the official trail location. Many of the bushwacked trails pass through the rare plant communities. During peak season, 518 people per weekend day were observed using the rock outcrops for climbing, viewing, and seating. The most tempting places to put one's foot happen to be the last refuge for these plants, whose ancestors were present in the days of the mountains' infancy.

Clearly, a new management concern presents itself at Craggy pinnacle. The National Park Service has a dual mandate to provide access for public use and enjoyment, while preserving the natural environment. It is in the spirit of this charge that Superintendent Everhardt has authorized funds for a stone-walled overlook for the pinnacle based on quantitative and qualitative research of visitor use at Craggy pinnacle. The overlook will feature a central area with four alcoves leading out from the center. Visitors will subtly be led into the alcoves by the views and privacy, while being prevented from accessing the fragile rock outcrops. To further attract visitors, a display identifying the mountain peaks will be set in each alcove. The rock wall is designed to blend in with the natural environment. Utilizing native stone, each alcove mimics the dominant lines of the nearby outcrops, following the natural contours of the site. This will provide a natural harmonious feeling in the overlook, while physically discouraging access to the rock.

On site interpretation will also serve as an effective tool for protecting the rare plant habitat. A park ranger will be roving the area to alert visitors to the fragile habitat, interpret the site, and insure that the visitors remain on the official trails. The ranger will also be available to field questions regarding the Parkway in general. Trail signs directing visitors to the official trails and informing them of the fragility of the area will be installed at various points to promote visitor understanding and compliance. The bushwacked trails will be closed off to discourage their use and the attendant problems of soil erosion on the southern slope of the pinnacle. The trail signs and additional staff should reduce confusion as to where the pinnacle trail begins, as well as enhance the visitor's experience by providing direct contact with a park naturalist.

The National Park Service is dedicated to visitor enjoyment through education, conservation, and preservation. We are proud to offer the unique features of Craggy Gardens natural area to the public. The conflict of intensive use in a fragile environment is a challenging management problem. This integrated strategy of research, design, and interpretation provides for continued public use without sacrificing habitat and its rare tenants. The ultimate responsibility, however, lies with individual compliance.

TRAIL CHANGES: In order to protect the rare plants, access to the pinnacle from the south side (visitor center side) will be prohibited and all unofficial trails to the peak will be closed off. The official trail head to the peak begins at the Dome View parking area 1/8 mile north of the visitor center. From the picnic grounds, the Carter Creek Trail will join the Mountains-to-the-Sea Trail heading north to reconnect with the existing Carter Falls Trail at a location well beyond the pinnacle and endangered plant habitat.

LOOK AGAIN !

There are a lot fewer trees with leaves that grow opposite each other rather than alternately. In fact, there is a little mnemonic to help us keep track of the four major ones: MAD BUCK, which is an acronym of Maple, Ash and Dogwood plus an abbreviation of Buckeye. (In regions where Horse Chestnuts outnumber Buckeyes, MAD HORSE serves just as well.)

There would seem to be no chance of confusing these four genera. Dogwoods and Maples both have simple leaves, but in one they are ovate and in the other they are conspicuously lobed. The rest are compound, those of Ash being pinnate in the arrangement of their leaflets, while Buckeye and Horse Chestnut leaves are palmate.

ACER NEGUNDO

This would work if it were not for the non-conformist Acer negundo, a tree that bears the appropriate though unimaginative common name of Ash-leaved Maple as well as one which could hardly be more incongruous, Box Elder. Here we have a Maple with opposite, pinnately-compound leaves that suggest White Ash (Fraxinus americana), which is the principal representative of its genus in our area--except for some convenient differences. White Ash leaves usually have seven leaflets instead of only three or five, and they are entire or nearly so, whereas those of Acer negundo have coarse, irregular teeth and sometimes even shallow lobes. In addition, mature specimens can attain twice the height of Ash-leaved Maples.

FRAXINUS AMERICANA

Maples and Ashes are easy to distinguish when in blossom, but the flowering season is very brief, while the seed vessels, or samaras, can be observed over a much longer period. Those of Acer negundo are typical of the Maples, and consist of twin divergent "wings" each containing a large seed. In the case of Fraxinus americana, they are single and much narrower, shaped somewhat like canoe paddles.

Dick Smith

S H O R T I A

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