

Chinquapin

The Newsletter of the
Southern Appalachian Botanical Society



Vol. 6, No. 4

Winter 1998

From The Editor's Desk:

We often get "pegged" by the public for some talent we have or expression we frequently espouse. Somehow, I seem to be pegged the "southern Appalachian fall color predictor," a name that may be more legendary than scientific. Last June or early July I had a dream that it was late October and I rejoiced, "No one has asked me what the fall leaf color will be this year." That, as you might guess, was only a dream and by mid July I had a call from the Raleigh *News and Observer* to give the early scoop on what sort of color season we would have. Based on my previous observations that good color follows drought, I suggested it was likely to be a better color year than 1997. And many friends and colleagues have agreed: it was indeed quite colorful in many places throughout the region.

But I was uncertain as the season continued to get drier and drier. Even worse was the appearance of brown blotches on the mountainsides as the trees and bushes began to succumb to severe drought in shallow, rocky-soiled areas. Indeed, when I joined the Blomquist Foray at Ft. Payne, Alabama, I really was taken aback to witness whole mountainsides completely brown. What I discovered, however, was that while the river was completely dry below DeSoto State Park and the shrubs were wilted or browning everywhere, the plants had cut off their leaves to water but did not have dead twigs for the most part. So, I fully expect that most of the seemingly dead trees will revive next spring when the warm weather returns after a winter of replenishing rainfall.

What are we to make of the vagaries in the weather patterns? I know many of you are fully aware that the deluge from Hurricane

Mitch left much of Central America in ruin, especially where the poorer human populations were located in the floodplains of severe flooding. I am reminded that the Appalachians were not always free from such deluges and perhaps during the 9,000-7,000 years ago period we had similar storms reach our area. Have you noticed the big boulders and debris avalanches that are found in our coves? Most of our regional, large coves have evidence of such mass movements. Even my home in Cullowhee Valley has such evidence. I also note that below such sites there often is a rich flora of the more circumneutral soil type. We do not have many sites with pawpaw (*Asimina triloba*), but they often occupy these places. The same is true for butternut (*Juglans cinerea*; see "Look Again" discussion below). Glade fern (*Diplazium pycnocarpon*) and Goldies woodfern (*Dryopteris goldiana*) often frequent such sites. Have any of you also seen such examples in your regions? I wonder if this pattern extends all the way up to New England.

Is our take-home lesson from such weather observations that we can expect ever increasing fluctuations in the weather patterns over the next several decades as our atmosphere continues to increase in CO₂ content, just as Paul Delcourt suggested to me over a decade ago? Maybe this is for us to continue to document and ponder well into the next century.

Once again we have slipped up. The last issue on the "White Spruce in Northern New Hampshire" did not have its author. The photo was also his contribution. If you are keeping copies, you might put a note after the title:
by **Richard W. Rhodes**

Endowment Update

Members should have received a request for support for the endowment with their dues notice in mid November. The endowment committee hopes that everyone who has not give before will think seriously about contributing, or contributing enough to move up in the roster one level if already a contributor. Thus far, only about a quarter of our members have given \$100 or more to the endowment. This year's goal is still to pass the halfway point toward the society's goal of \$200,000 and to reach the \$200,000 in the next few years. We look forward to receiving your donations.

-SABS Endowment Committee

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"The Republican's 'Contract with America' is supposed to be good for our nation as a whole. So why does it contain nothing to preserve the quality of the environment, despite the fact the polls show that the majority of Americans are concerned about the environment and are willing to pay for maintaining its quality. I don't think it is because politicians are unaware of the importance of environmental protection, but rather that they, and people in general, view the environment as a separate problem, something to consider when economic and social problems have been dealt with."

-E.P. Odum, 1998, *Ecological Vignettes*, Harwood Academic Publishers, Amsterdam. 269 p. [p. 179].

Organization Spotlights

The New England Wild Flower Society

Founded in 1900, the New England Wild Flower Society (NEWFS) is the nation's oldest institution dedicated to the conservation of wild plants. Our mission is to promote the conservation of temperate North American flora through education, research, horticulture, habitat preservation, and advocacy. We manage four nationally distinguished programs.

The Education Program in Native Plant Studies. From courses, field trips, garden tours, and teacher training to family programs that share the natural world, every year NEWFS teaches thousands of people about native plants. No other botanical organization or university in the country offers such an array of native plant educational opportunities. In addition, the Society's booklets, magazines, and catalogs encourage people across North America to conserve wild plants and natural habitats, as well as cultivate native plants in home landscapes.

The Garden in the Woods. NEWFS owns and operates the Garden in the Woods, the largest landscaped collection of wildflowers in the Northeast, as its botanical garden and living museum. The Garden is a center for conservation horticulture, where dedicated professionals pioneer the science and art of native plant cultivation. At NEWFS nursery, home gardeners and professionals can choose from the largest selection of propagated native plants in New England.

Plant Conservation Volunteer Corps. In 1998 NEWFS began a Volunteer Corps to survey, monitor and preserve New England's native plant communities. These knowledgeable volunteers assist conservation organizations such as state heritage programs and land trusts as they struggle to manage plant populations on public and private lands.

The New England Plant Conservation Program (NEPCoP). NEWFS coordinates the New England Plant Conservation Program (NEPCoP), an alliance of government agencies and private conservation organizations working to end plant endangerment throughout New England. Few people realize that wild plants are in crisis in our own "back yard." As the leading steward of New England's 3,000 native plants, including over 500 rare species, the Society is on the cutting edge of plant conservation science, strategy, and education.

For More Information: For membership information or a list of Society publications,

please contact the New England Wild Flower Society, 180 Hemenway Rd., Framingham, MA 01701; e-mail: newfs@newfs.org; <http://www.newfs.org>; phone: (508) 877-7630.

-Barbara Pryor

The Connecticut Botanical Society

The Connecticut Botanical Society, founded in 1903, is a non-profit organization of amateur and professional botanists. Since its organization, the Society has remained dedicated to its original goals: to secure a thorough knowledge of Connecticut's native flora, to accumulate, hold and maintain specimens and documents for a permanent botanical record. The historic records and the the herbarium are maintained at the Osborn Memorial Laboratory, Yale University in New Haven. The Society also recommends significant botanical areas for protection and management, promotes public awareness of the State's rich natural resources, and supports scholarly botanical research in Connecticut. The Society publishes a quarterly Newsletter, holds two formal meetings a year, and has weekly field trips during the spring and summer months. More information may be obtained from Casper Ultee, 55 Harvest Lane, Glastonbury CT 06033, phone (860) 633 7557, E-mail: casperu@aol.com.

-Casper Ultee

Missouri Native Plant Society

The Missouri Native Plant Society was founded in 1979 by a group of botany professionals, educators, and avid amateurs. The purpose of the Society is "to promote the preservation, conservation and study of the wild plants and vegetation of Missouri; the education of the public to the value of the native flora and its habitat; and the publication of related materials." Membership is open to anyone interested in the purpose of the Society, and over the last few years has ranged between

300 and 400. There is a state-wide organization with five local chapters scattered around the state. Annually there are four quarterly business meetings, sponsored by the State Board, held in various locations throughout the state, each usually accompanied by one or more botany field trips in the vicinity. In addition to the state programs, local chapters organize and lead botany field trips, conduct programs, and publish their own newsletters.

There are two publications distributed by the state organization: The journal Missouriensis, published annually on a schedule based on the availability of pertinent materials, and the Society newsletter, Petal Pusher, published bimonthly. Society members have contributed to the general knowledge of the occurrence and distribution of native and exotic plant species in Missouri, and have prepared illustrated (slide) programs for public use. The Society also has developed an awards program supportive of its major goals.

Initially, MONPS could present up to four awards annually-one each for education, research, plant stewardship, and outstanding contributions to Missouri botany. Later, a fifth award, for "service" to the organization itself was added. Another effort the Society has developed to encourage an appreciation for our native plants is the "Wear the Coneflower" badge program. Upon completion of certain exercises relating to native plants, the participant earns a distinctive badge. In addition, the Society has supported state and federal legislation to protect wild plants, and participated in plant "rescue" operations. Information about the Society, or any of its programs, can be obtained by writing the Society at P.O. Box 20073, St. Louis, Missouri 63144-0073. Details about the Missouri Native Plant Society can also be found at: <http://www.missouri.edu/~umo-herb/monps>.

-Larry Morrison, President,
Missouri Native Plant Society

"It often pays to design with natural forces and pulses, rather than against them."

-E.P. Odum, 1998,
Ecological Vignettes,
Harwood Academic
Publishers, Amsterdam. 269
p. {p. 51}.

Cold Mountain Botany

I suspect many SABS members have read Cold Mountain* by Charles Frazier. As a N.C. (Haywood County) mountain boy myself, it was a delight to read a book and be familiar with the setting and recognize much of the colloquial language and the plants so frequently mentioned. It is a fascinating story, elegantly told with vivid and convincing descriptions of the landscape, its people in the 1860s, and the flora.

But this is not a book review. I want to bring up several haunting botanical questions that well illustrate the problem of using common names of plants. Just what does the author mean?-in several cases.

"*Rhododendron*" blooming in May (p. 28, 29)? In the Cold Mt. area this would be *R. minus*. It is common there.

"Black balsam" at Wagon Road Gap (p. 41) and in the high mountains around Cold Mountain (p. 229). What is this? "Spruce" is mentioned on p. 228 and "Fraser fir" on p. 278. I am sure black balsam is one of these, but which one? The only use of this name in any of my references is for alpine fir in Colorado.

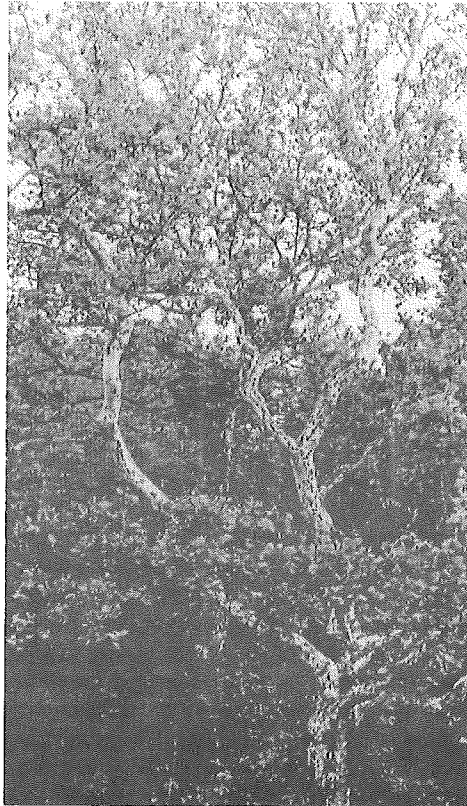
"Jack pine" in the North Carolina Piedmont with slash pine and red cedar (p. 53) and in the mountains with sumac (p. 258, 260). It is certainly not *P. banksiana*. It is probably Virginia pine.* However, I cannot find any use of the name Jack pine for *P. virginiana* in any of my references.

"Slash pine" in the North Carolina Piedmont in the 1860s (p. 53) would not be *P. elliotii* but rather either loblolly or shortleaf. This common name has been used for both according to Sudworth's Check List (1927). Growing with Virginia pine and red cedar, it was probably shortleaf.

"Myrtle" in the lower Piedmont (p. 55) is certainly *Myrica cerifera*. But then "myrtle" in a mountain heath bald (p. 278) would be *Leiophyllum*.

"Tulip poplar" in the middle Piedmont (p. 65) and in the mountains (p. 40, 236) is definitely *Liriodendron*. However use of "poplar" and "tulip tree" separately becomes problematical. "Poplar" in the middle Piedmont (p. 92, 115, 142) could be either *Populus deltoides* or *Liriodendron*. I suspect the latter for *P. deltoides* would probably have been called cottonwood. "Poplar" in the mountains (p. 228, 236, 277, 282, 283, 291, 294, 337, 338) is fairly definitely *Liriodendron*. The description of one huge poplar (p. 283, 291, 294) sounds like the dimensions of *Liriodendron*. Then at one time (p. 236) Potts ducked behind a big "tulip poplar" and Inman walked over to "the poplar." This definitely indicates the synonymy of those names at least

for that one tree. The name poplar, however, has been used for *Populus grandidentata* locally on Mt. Pisgah near Cold Mountain in Haywood County. Was the bigtooth aspen more common in that area in the 1860s? An intriguing thought. Then there were poplar leaves seen in a spring



This sycamore (*Platanus occidentalis*) was one of a small stand of sycamores growing between a road and stream in northeast Pennsylvania near Milford. Note the darker patches of the bark against the white, a feature typical of sycamores.-E. D. Savold, photographer, June 1998.] Ed. note: This darker mottling is not seen in our southern Appalachian trees.

bottom (p. 227) in Madison(?) County that I suppose could have been *Populus candicans* (*P. Xjackii*). So just what are all these poplars mentioned in the book?

"Tulip tree" in the mountains (p. 282) was growing with buckeye, silver bell, and basswood. Is this also *Liriodendron*? However, both the names "tulip tree" and "poplar" appear on the same page which makes one wonder. Could the name "tulip tree" have ever been used for a magnolia like Fraser magnolia or cucumber magnolia? I cannot find this in any reference but it seems plausible.

"Boxwood" in the mountains was used by Stobrod to make the fingerboard of his fiddle (p. 228). Certainly not *Buxus*. According to

Sudworth, the name boxwood has been used for both *Cornus florida* and *Ilex opaca*. Either one of these, with hard white wood, could have been carved and then dyed with poke berries. But then there were boxwoods on either side of the steps to Ada's house (p. 295, 297). This sounds like they could have been *Buxus sempervirens*. Was it cultivated way back in our mountains in the 1860's?

It may seem too fastidious to question, like this, the meaning of these common names in a novel. However, the other details in the book are so realistic, that I could not help but wonder what some of these names really meant. And if the author heard these names from local history and family stories passed down from his great-great-grandfather, then they could be a good documentation for the plant names used by the local folk at that time.

- James W. Hardin, Raleigh, NC

*Ed. note: Cold Mountain is a name used for at least three locations in North Carolina: Avery-Burke and Jackson-Transylvania on the county lines, and Haywood County southwest of Asheville. I imagine there are other places here in the East that some of you will tell us about also. I suspect that more northern folk, familiar with *Pinus banksiana*, did not recognize the difference in the more southern *P. virginiana* and called it Jack Pine.



Fraser fir (*Abies fraseri*) at Mt. Mitchell, North Carolina. These trees survived the onslaught of balsam woolly adelgid (*Adelges balsamea*) but will never develop normally. In the area, young trees are returning portions of the devastated stands at these high elevations.-Ed. Photo by E. D. Savold, September 1998.

Core Arboretum Celebrates 50th Anniversary

About 100 persons attended an outdoor ceremony October 4, 1998 to celebrate the 50th anniversary of the Core Arboretum (West Virginia University, Morgantown WV). Guests socialized, enjoyed displays that included old photographs and listened attentively to a brief formal program. Speakers included WVU Provost Gerald Lang, who endorsed the results of a survey that established official Arboretum boundaries; Eberly College of Arts & Sciences Dean M. Duane Nellis, who announced the success of a campaign to establish an endowment fund for the Arboretum; and Biology Department Chair Keith Garbutt, who announced the naming of a trail for longtime Curator Roland Guthrie.

The Core Arboretum encompasses 91 acres, mostly old-growth hardwood forest on hillside and flood plain, on the WVU campus. There are also some lawns planted with specimen trees. A teaching, research and service facility, the Core Arboretum is best known for its wildflowers, trees and birds. The facility's name commemorates founder Earl L. Core, who played a major role in the establishment of the SABS and edited *Castanea* for 35 years. The SABS sponsored memorial trees there for Earl L. Core and Elizabeth Ann Bartholomew. One of the Arboretum's trails is named for John Lewis Sheldon, the WVU botanist who suggested the SABS journal be named "Castanea." For more information contact Jon Weems, WVU Dept. of Biology, PO Box 6057, Morgantown, WV 26506-6057. Email <jweems@wvu.edu>.

-Jonathan R. Weems

"There are two spiritual dangers in not owning a farm. One is the danger of supposing that breakfast comes from the grocery, and the other that heat comes from the furnace."

-Aldo Leopold. 1949.

A Sand County Almanac.
p. 6.

"Just about everything that concerns us as humans on this earth - growth, competition and cooperation, health, quality of life, survival, use of energy, space and resources, relationships with other forms of life, and so on - has parallels in nature. Therefore it stands to reason that we can learn a lot from ecology..."

-E.P. Odum, 1998, *Ecological Vignettes*,

Harwood Academic Publishers, Amsterdam. 269 p. (p. xiii).

- Look Again -

By Dick Smith

Reprinted with permission from *Shortia* 8:4, Winter, 1986-87.

In the nut-gathering season a squirrel roaming the southern forests can count its blessings in dozens of forms, but we humans-if we bother to partake of this bounty at all-are likely to confine our attention to the walnuts.

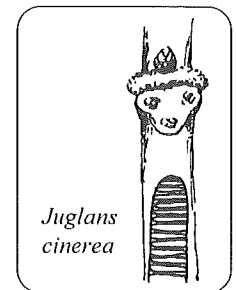
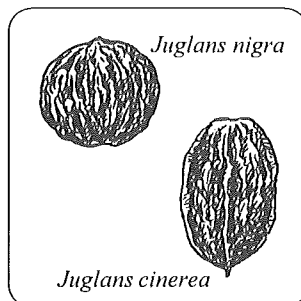
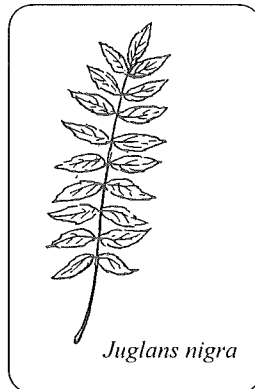
In addition to the Black Walnut (*Juglans nigra*), which is renowned equally for its superb wood and pungent nut-meats, we are favored by the Butternut (*J. cinerea*), sometimes called White Walnut, a tree especially suited to acid soils.

Both are easily recognized by their pinnately-compound leaves with up to 23 toothed leaflets of nearly uniform size. In contrast, our hickories (*Carya* spp.) seldom have more than nine leaflets, and often the basal ones are smaller and the terminal one the largest.

In the absence of leaves, the branchlets furnish diagnostic clues [to the species identity]. The chambered pith (in *Carya* it is solid) is light brown in *J. nigra* and a dark chocolate color in *J. cinerea*. Moreover, the latter sports a "mustache"-a woolly ridge across the top of each three-lobed leaf scar.

The foliage of an unrelated tree, American Mountain Ash (*Sorbus americana*) might appear to be similar, but its leaflets are smaller, the pith solid, and the leaf scars narrow.

Still other differences occur in the fruits of the two walnuts. Both the husk of *J. nigra* and the corrugated nut it encloses are almost spherical, while *J. cinerea* has a slightly pear-shaped husk and a nut which is more cylindrical and bears four distinct vertical ribs.



*Ed. note: In our region, *J. cinerea* is often in the more basic lowland and cove forest soils and the 1965 USDA handbook notes it tolerates dry sites, especially on limestone. It has been in decline for some time due to canker fungus and many of the large trees are dying in the southern Appalachians. It may be more abundant northward. With less pressure from the timber industry, *J. nigra* is increasing due to disinterest in the darker woods for furniture and paneling.

BOTANICAL EXCURSIONS

By George Ellison

Winter Orchids in the Blue Ridge

In the Blue Ridge Province—the central core of mountains that extend from southern Pennsylvania to north Georgia—there are about 50 native orchid species. We think of showy orchis and lady’s slippers in spring, yellow- and purple-fringed orchids in summer, and ladies’ tresses in autumn. But as curious as it may seem, winter is also a prime time to locate four of our native orchids: downy rattlesnake plantain (*Goodyera pubescens*), dwarf or lesser rattlesnake plantain (*G. repens*), puttyroot or Adam-and-Eve root (*Aplectrum hymale*), and crane-fly orchis (*Tipularia discolor*).

These plants bloom inconspicuously during the summer, but all four display eye catching evergreen leaves during the winter; indeed, puttyroot and crane-fly orchis for the most part bear leaves only in winter.

The rattlesnake plantains have leaves that are bluish green in color with distinct white veins. Downy rattlesnake plantain leaves are three inches long with veins that are confluent (i.e., they come together at the base of the leaf). Large colonies are often located from the lowest elevations up to 4,000 or so feet.

As its name indicates, dwarf rattlesnake plantain displays leaves that are smaller—and the veins are not confluent at the base of the leaf. In my experience, this latter species is rather uncommon, being found at elevations above 3,500 feet in damp, cool woods, often mixed with moss.

Puttyroot and crane-fly orchis have in common the trait of almost never bearing leaves and flowers at the same time. Their solitary basal leaves emerge in late summer after the flowering period and are conspicuous in woodlands from late November into early spring. As the flowering stems emerge in spring, the leaves wither and disappear. For this reason they are sometimes called winter leaf or hibernal orchids.

This winter leaf strategy apparently evolved as a way to collect the sun’s energy most efficiently in rich hardwood forests when

the leaf canopy is absent. Both plants have prominent bulb-shaped roots (corms) that are well-adapted for energy storage. Once the canopy closes overhead in spring, the leaves die back so as to allow the stored energy to be channeled directly into flowering and fruiting processes.

Puttyroot is perhaps the best known of these orchids as it is quite common in some watersheds. The attractive gray-green oval leaves are up to seven inches long by three inches wide with conspicuous corrugated pleats that run the length of the leaf. These are beautifully veined in silver and stand out clearly on the woodland floor.

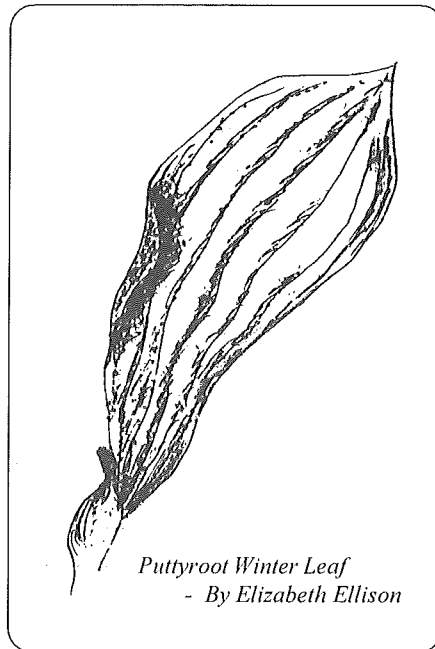
One of its common names derives from a sticky paste that can be rendered from the corms. This putty-like substance is reputed to have been used by the early white settlers to mend broken crockery. But long before their arrival on the scene, the Cherokees had discovered the high energy content of this rootstock and fed it to their babies to make them fat and healthy. The other common name of Adam-and-Eve root derives from the fact that this year’s leaf-bearing corm (Eve) remains attached to last year’s corm (Adam) by a piece of umbilical-like root filament.

Crane-fly orchis derives its common name from the fancied resemblance of its delicate flowers to the insect of that name. Although the plant is rather common in our region, it is

inconspicuous when flowering. The winter leaf is also its outstanding feature. The upper side of this leaf has been aptly described as “watery purplish green.” It is

smaller than puttyroot’s leaf and lacks the pleats and silvery veins. Look for the wart-like bumps on the upperside that make it resemble a toad’s back. Then examine the underside, which is a rich satiny purple. The entire leaf turns dull red before disappearing in the spring.

The somber winter landscape makes us more attentive to and appreciative of colors and textures. There are a number of small woodland evergreens like trailing arbutus, galax, teaberry, partridgeberry vine, and the winter orchids that are a delight to encounter nestled down among the leaf-litter while out on a winter walk.



Puttyroot Winter Leaf
- By Elizabeth Ellison

“Up to now man has generally acted as a parasite on his environment, taking what he wants with little regard for the welfare of his host (i. e., his life-support system).”

-E. P. Odum. 1971.
Fundamentals of Ecology.
W. B. Saunders Co.,
Philadelphia. 574 pp.
(p. 510).

In the Garden

One of our most common linkages to nature and plant life is with gardens. Our country is quickly becoming noted for its gardens, much as the Old World has. We invite those associated with gardens, small or large, to share a brief history and description of your garden, perhaps a unique feature or purpose, and whether there is an entrance charge.

Highlands Botanical Garden

Western North Carolina is blessed with many native plants and many would suggest that it represents a natural garden in itself (refer to B. W. Wells Natural Gardens of North Carolina for such an insight). But it is often difficult to examine a large variety of species in a small area in just a few hours without some serious hiking. This problem is being remedied at many places in the region, such as the North Carolina Arboretum in Asheville which has just opened its access road at the junction of the Blue Ridge Parkway and NC 191, and the Corneille Bryan Nature Center at Lake Junaluska (see Chinquapin 6(1): 6). Another place that many vacationers and visitors to the Highlands Nature Center are appreciating is the Highlands Biological Station Garden.

This garden has been under development for the past decade under the auspices of the Station. Trails have been laid out around Lake Ravenel and along a small feeder stream on the grounds of the Station. The stream carries a goodly amount of sediment and this has produced a suitable boggy area as the sediment accumulates. Trails wind through white pine, hardwood, and rosebay rhododendron thickets and along the edge of the lake. In addition, the Rhododendron Trail continues northeast into a delightful but completely natural old-growth Canadian hemlock cove forest. The gardens contain approximately 500 species of native plants including many that are rare to the region, such as Grays lily (*Lilium grayi*), grass of parnassus (*Parnassia asarifolia*), sweet pitcher plant (*Sarracenia jonesii*), Frasers sedge (*Cymophyllus fraserianus*), mountain camellia (*Stewartia ovata*), and many others. The garden is open year-round, there is no admission charge and it can be accessed from East Main Street where it becomes Horse Cove Road in east Highlands at the Nature Center. For information, you may contact the Highlands Biological Station, PO Box 580, Highlands, NC 28741, by phone (828)526-2797 or by e-mail <hibio@wcu.edu>.

-J. Dan Pittillo

WILD Ideas

Ideas are born from inquisitive minds. Perhaps some of us have had speculative thoughts that turned out to be basically correct when the facts were properly evaluated. Researchers often are driven by hunches and due to discipline must work for years to come to publishable conclusions. Many of us do not feel that these wild ideas should be left unexplored but personally will not have an opportunity to probe them further. This is the basis of this column. The wild idea needs to have some factual basis, though it does not necessarily need to be fully supported as in a reviewed publication.

What bright thought have you had lately you are willing to share with us?

Fire was More Common in the Southern Appalachians than Previously Thought

Many of us have considered fire relatively unimportant in the southern Appalachian forests because we observe very large trees, damp and dense understory, and presence of fire intolerant species. Recently, Paul and Hazel Delcourt have been investigating the presence of charcoal in sediments at several sites throughout the region and have come to the conclusion that fire may be more frequent than most botanists had envisioned.

Almost everyone think of the Great Smoky Mountains and dense Canadian hemlock with thick understory of *Rhododendron maximum* to represent an ancient vegetation that has changed little over decades. At least, this was the idea I had when we began our vegetation sampling project last spring in Cataloochee Valley. To envision a massive

hemlock of five to six feet through its base as a fire resistant tree somehow seems to be stretching an idea quite a bit. But as we moved through this valley and noted fire scars on many of the trees and charcoal on stumps, we began to have a different idea about the role of fire historically in this plant community. Furthermore, the rangers who have fought natural fires in the park over the past several decades also think fire played a more important role than the "Smokey the bear" crowd would suggest. One ranger suggested that nearly all hemlock stands had been burned in Cataloochee Valley.

Our project began as an effort to resurvey the plots that Frank Miller established when he was given the task of producing a vegetation map of the Great Smoky Mountains National

continue on page 31

"A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise."

-Aldo Leopold, 1949.

Highlands Biological Station Grants-In-Aid

The Highlands Biological Station, located in western North Carolina, has a number of grants-in-aid available to predoctoral and postdoctoral investigators, including senior faculty, for the support of research on the biota and environments of the southern Appalachians. Awards are usually based on the period of residency at the station in accordance with the following schedule: predoctoral, \$250/week; postdoctoral, \$400/week. Recipients of

grants are provided research space without charge. Housing is available for modest charges.

Application forms may be obtained from The Highlands Biological Station, PO Box 580, Highlands, NC 28741 (828-526-2797) or by e-mail <hibio@wcu.edu>. Applications are due March 1, with notification by April 1.

-Robert A. Browne,
Wake Forest University

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Park in the mid-1930's. Miller kept excellent notes and his crews must have experienced many challenges as they went about gathering a prescribed 1 chain by 2 chain plot at the "X" on the maps. Students Aaron Cooper and Larissa Knebel, several assistants and I found that in Cataloochee Valley there were over 200 plots and some 40 of them contained a significant number of *Tsuga canadensis*. We plotted out these and went systematically about relocating them, based on the mapped "X" and the descriptions given by the surveyors. We anticipated many of these plots would be altered as some of the larger trees fell or as some might have been leveled by storms or other catastrophes. What surprised us was the frequency of fire evidence. Without diligent searches, we recorded confirmation of fires in 25% of the stands we examined.

Our question to the research community: Have the hemlock stands we have been observing have unusually frequent fire or have we simply traditionally the fire frequency in our old growth forests?

-J. Dan Pittillo

Letters To The Editor:

Dr. Larry Mellichamp of UNC-Charlotte writes:

Perhaps some of your readers can suggest an answer to this question: Recently I took a class to the Pisgah Ranger Station area near Brevard, NC to look at ferns. We found a wonderful site along US 276, a formation I would call a fern glade - a solid mass of ferns as a ground cover, under high trees, with NO understory shrubs or sapling to speak of. There were 10 species of ferns in this one acre site, on steep slopes, rock outcrops and flat land. My question is, why were there no tree saplings, shrubs or even other dicots. The ground cover of New York fern, Lady fern and Maidenhair was completely carpeting the ground. Are they allelopathic; or does it stay too wet there in winter for seedlings, or is the fern cover too thick for seedlings to penetrate roots; or is there another soil factor that eliminates angiosperms, or have deer so thoroughly nibbled the saplings back that they are not apparent. I find it hard to believe that

no angiosperm seeds ever make it to that site - they must. But they are not evident as established plants. I found it intriguing, and began to speculate as to why since the students asked. I see these beautiful solid ground covers of New York fern occasionally in mesic mountain forests.

"When things get tough, it pays to cooperate."

-E.P. Odum, 1998,
Ecological Vignettes,
Harwood Academic
Publishers, Amsterdam.
269 p. (p. 33).

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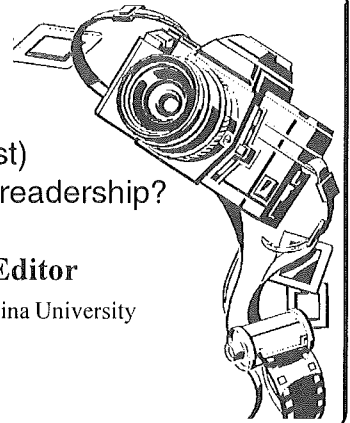
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Photos Wanted!

Have you any good quality (high contrast) photos you would like to share with our readership?
Please send to the editor:

J. Dan Pittillo, Newsletter Editor

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