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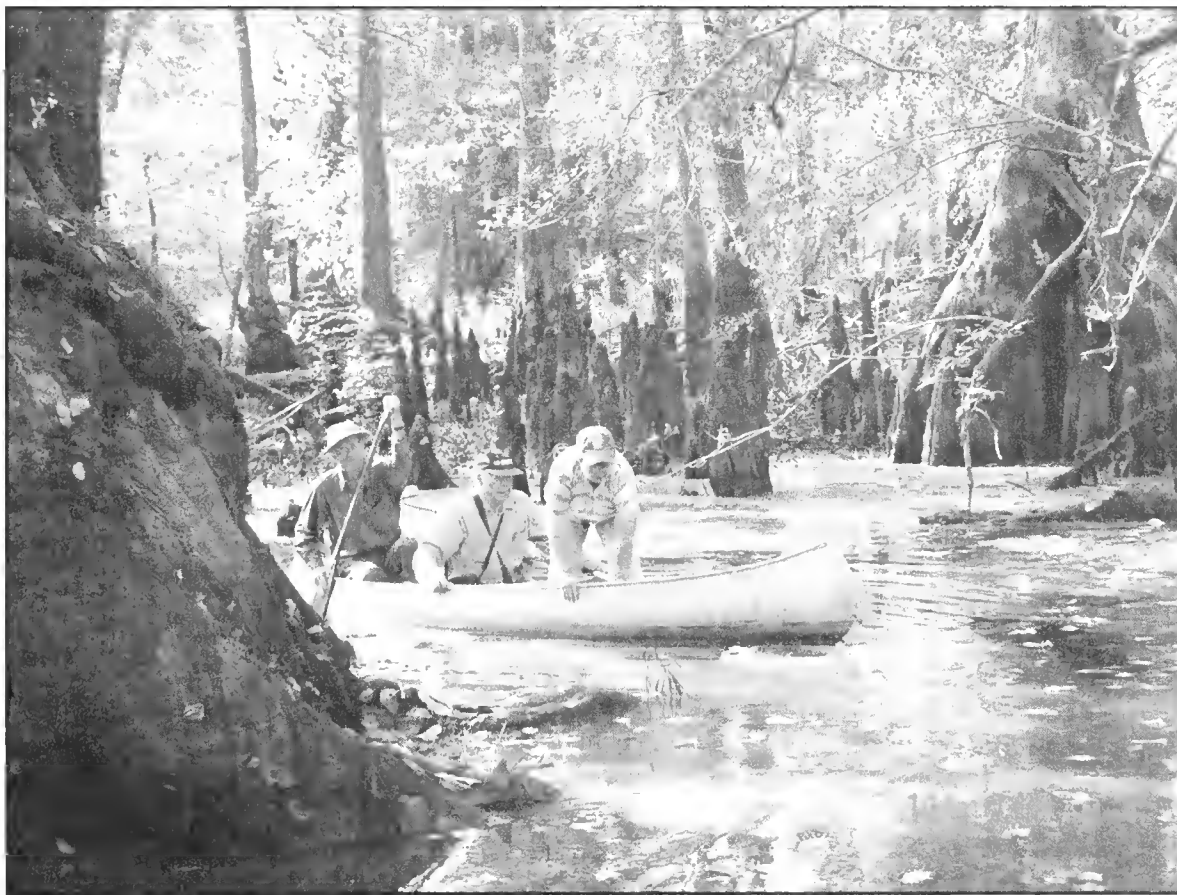


Bulletin

A publication of the VIRGINIA NATIVE PLANT SOCIETY

Conserving wild flowers and wild places

www.vnps.org



Journeying into the Cypress Bridge Forest

Rare ancient forest explored

In October of last year, a hearty group of VNPS members as well as others interested in exploring unique habitats ventured into the swamps of the ancient Cypress Bridge Forest. About 14 "explorers" participated and the three-hour walk passed very quickly. The International Paper Company, Inc. owns the property, and at the time of the walk, the Virginia Department of Conservation and Recreation was negotiating purchase of the tract from that company. It is highly likely that negotiations will be successful.

The starting point for the Cypress Bridge Forest field trip was at the remnants

(See The ancients, page 4)

Skunk cabbage flowers: The heat is on!

It is a remarkable sight, as striking as it is unexpected: January skunk cabbages emerging from the frozen mires they call home, melting their way through snow and ice. It seems so improbable because in everyday experience plants exist at equilibrium with ambient temperatures. Leave an apple on the front seat of your car in summer, it gets hot; examine your tomato plants on that first frosty morning in autumn, and they are perme-

ated with ice crystals. People, mammals and birds are inherently warm, and pretty much nothing else is. Except, of course, for the exceptions, of which skunk cabbage is one.

Skunk cabbages are thermogenic, meaning that they produce their own heat. They do this in roughly the same way that people, mammals and birds maintain their body temperature, by the biochemical breakdown of food/fuel molecules in individual

cells, and by insulation of some sort to minimize loss of whatever heat they can muster. The simple sugar glucose serves as food/fuel for both plant and animal cells in a process called cellular respiration. Overall, the process of cell respiration is fairly complex but a few highlights will assist in understanding what is going on inside those cozy little skunk cabbages in the dead of winter.

(See Snow melting, page 2)

INSIDE: Check out the VNPS events across the state, page 8

From the president

Think 'Habitat' when heading outdoors

Brrrrr! It's mid-winter (the weather report is showing people in Minneapolis using bananas for hammers). Many of you can rush right out to see this year's honored native plant, *Symplocarpus feotidus* or skunk cabbage. Here in the coldest part of the state, it's going to be a while.

It is time for planning the coming year, and several events are listed on the back page of this newsletter. Grab your calendar and join in.

A statewide invasive plant removal day is being planned by the Virginia Master Naturalists for May 2, and at our last board meeting, the chapter presidents showed interest in participating. We had a lively discussion about the date. Most of us feel that the work is better done at other times of year. But we also talked about the advantages of getting people out on a nice May day at a time when the plants are easier to recognize and to see in action, and how that might be a good introduction for those unfamiliar with the problem. Seen that way, an event in a populated area with high visibility could be very educational. And we need to educate – we will wear ourselves out and have little to show for it if we try to remove invasives without

stopping some of them at their gardening source. We will try to have more information in our next issue.

Speaking about invasive plants can be a touchy subject, since many gardeners have their favorite invasive plant and they are not happy to let go of it. Perhaps speaking about the positives of habitat is a better way to begin. I got that thought and this quote from a class announcement that came to me via Kathi Mestayer, John Clayton Chapter and state board member: "...the outdoors is habitat whether we think of it that way or not. That puddle in the sidewalk the birds seem to prefer to the birdbath, the fireflies flashing in unison in summer, the box turtle crossing Strawberry Plains Road – they're all dealing with the resources (and obstacles) of their habitats. And we, as humans. . .have a significant impact on them."

Rather than putting out plants and moving them around like so many pieces of furniture, encourage people to notice that the plants are alive and working to produce the energy that supports everything else.

Your President, Sally Anderson

Snow melting ability rare in the plant world

(Continued from page 1)

First, it is important to realize that the chemical bonds of glucose represent stored energy and as these bonds are broken during cell respiration, some of that energy is diverted to another molecule called Adenosine triphosphate (ATP), but some is simply lost, dissipating from the reacting molecules as heat. We often view the production of ATP as primary, because cells use ATP to accomplish all manner of necessary biochemical activities. Heat loss is often viewed as an unavoidable outcome of burning sugar to make ATP. Ultimately, however, metabolic heat released from the breakdown of glucose is how skunks, skunk cabbages, and you and I stay warm.

Of course, glucose for heat production in skunk cabbage is part of a much larger cycle. Energy from sunlight is used to make glucose in the leaves via photosynthesis during the summer. This sugar is then transported to the thick underground rhizome and stored as starch where it sits until flowering time; then, starch is broken down to yield sugar that is transported to the flower cluster (spadix), where it is burned, in large part, to produce heat. In a sense, it is last summer's sunlight that melts the snow and ice around flowering skunk cabbages.

As it turns out, certain details of thermogenic (heat-producing) respiration in skunk cabbage are radically different from the process that occurs in animals. Significantly, cell

(See Skunk cabbage, page 6)



The flowers of this skunk cabbage are melting the snow on top. (Photo by John Hayden)

Member offers creative way to change energy policy

VNPS has recently received the following proposed shareholder resolution to Dominion Resources from Ann Amundsend, member from South Hampton Roads, and her daughter Ruth Amundsend. It suggests a way to change energy policy "from within" and we thought some of you might find the idea interesting. Although this resolution is in no way connected to VNPS, it is compatible with the VNPS perspective on preserving Virginia's native plants and their habitats. VNPS also supports exploring alternative energy sources that better respect the environment. Mountaintop removal destroys native plants and their associated habitats. Assuming the proposal meets SEC rules, the resolution will come before stockholders at the annual meeting. Stock must be owned before the end of February 2009. For information contact Ruth McElroy Amundsen at 5614 Shenandoah Ave., Norfolk VA 23509, (757-858-8548 or rma@cox.net).

The Proposal

Recommendation: Dominion Resources should set and pursue a company goal to achieve 80 percent fossil-fuel-free electricity generation by 2020.

Rationale: Electricity production accounts for 40 percent of world CO₂ emission (U.S. Energy Information Administration). Coal is the highest contributor at 80 percent of the U.S. CO₂ production from electricity generation (EIA). Dominion Resources currently produces electricity using 47 percent coal, 12 percent oil and natural gas, 37 percent nuclear and 4.6 percent renewables (42 percent fossil-fuel-free).

The International Energy Agency, Intergovernmental Panel on Climate Change, and World Energy Council agree that quick, aggressive action is needed in reducing carbon-based energy sources and expanding renewable resources, to prevent dangerous interference with the climate system. Climate change produced by greenhouse gases produces devastating ecological damage and human health effects. Companies are financially impacted both by current weakened economies and a probable future direct tax on carbon emission.

Coal-fired electricity has other negative impacts. Mountaintop removal mining removes whole mountaintops and fills stream valleys. In the Appalachia, 450 mountains, over 400,000 wilderness acres, and 1,000 miles of river valleys and streams have already been destroyed (EPA; for visuals, see Google Earth, Global Awareness Layer, Appalachian Mountaintop Removal). The areas leveled are ecologically diverse forests, and are not replaced by "remediation" into grassy flats. Tom Farrell, CEO of Dominion, said at the 2008 shareholders meeting, "I wish I could tell you we will never burn another ton of mountaintop coal."

A coal plant burning 1.6 million tons of coal concentrates two tons of uranium and five tons of thorium in fly ash. Coal plants are the largest producers of mercury in the U.S., with over 50 tons per year (EPA). Nationwide, 126 million tons of coal waste is generated annually, enough to fill 1 million

train cars (National Research Council). Coal-fired plants cause premature deaths of 24,000 Americans each year and hundreds of thousands of cases of lung and heart disease (American Lung Association, Clean Air Task Force). The Virginia Governor's Commission on Climate Change came within one vote of banning all new coal-fired plants (2008).

Investment in renewable energy sources would create jobs and allow expansion of energy generation. By implementing a mix of additional wind farms, nuclear, solar thermal, solar farms, rooftop solar, tidal/wave farms, biomass generation, and conservation measures, Dominion would be able to close down all coal-fired plants, cease mountaintop removal mining, and be nearly independent of fossil fuels for electrical power by 2020, well ahead of the Virginia state goal.

It can be done. Iceland uses 100 percent renewable electricity, Denmark has 25 percent wind electricity (targeting 40 percent by 2030), and France uses 80 percent nuclear electricity (EIA). California is adding over 3000 MW of rooftop solar by 2017. The new ACEEE report shows that energy efficiency measures can offset 20 percent of Virginia electricity needs by 2025.

By turning to electricity generation that is free of the environmental, health, and financial handicaps of coal, Dominion will position itself for future financial success.

Recommended reading: *Plan B 3.0*; *Earth: The Sequel* and *Power to Save the World*.

The Flora of Virginia Projects needs your support more than ever

Our Flora of Virginia project has been moving ahead on schedule at a steady pace for eight years. The text has been completed for 160 of the 200 flora families in Virginia. As we enter the ninth year of the project, current state and national financial concerns have become reality for the Flora. The Flora Board voted in November 2008 at its 30th meeting to affirm the salaries of two authors for the remaining years of the project. This is a time for us as VNPS members to recall the society's pledge

to support the project through publication that is still expected in 2012.

Our VNPS members have given generously to assure Virginians will have a definitively current flora and now, more than ever, the Flora of Virginia Project needs our financial gifts.

Please visit the redesigned project website, www.floraofvirginia.org, that now features photographs of the authors and artists and describes the support organization for the project. If you are a new member who is think-

ing, "What is a Flora?" or "Why do we need a Flora?," then you need to visit this website. If you do not have access to the web, please let me know and we will be happy to furnish you with full information about the Flora Project.

Whether you have donated before or are just learning about the Flora Project, please give serious thought to supporting this historical and long overdue botanical reference publication and field manual of Virginia's

(See *Flora*, page 6)

The ancients at Cypress Bridge have stories to tell

(Continued from page 1)

of the old bridge located about three miles SSE of Courtland, (36.67N, 77.04 W), and on the shore of a deep, sour smelling, black slough that runs into the Nottoway River. At that point we met with our guide, Byron Carmean—one of the co-discoverers of the Cypress Bridge Forest. Byron is a retired school teacher and an enthusiastic hunter of and expert on unusual trees

The water level was very low because we arrived at low tide and also during a period of drought. On the other side of the slough we could already see tightly packed vegetation that was very different from what many of us had ever seen. We all felt that something very unusual and perhaps even spectacular awaited us, and we were anxious to get across to the other side. The old bridge was obviously defunct, but fortunately we could count on two canoes provided by Byron Carmean and Jim Murray to ferry us across. Jim's canoe was made in 1945 by Grumman Aircraft, shortly after that company started diversifying after the post WWII slump in aircraft production. Although that canoe is now 50 years old, Jim told us the company still stocks and provides spare parts.

The crossing was easy and although we were assured that alligators were not present, the occupants kept their hands well clear of the water. As we approached the opposite shore, we already were in the middle of numerous bald cypress and water tupelo trees. A very large one had a hollow base big enough to park a canoe in. Hollow bases and large hollow trunks are something characteristic of these trees, and we were told this is an important reason for their survival since it made them unsuitable for lumbering. Also visible were the "knees," which sprout from cypress trees, sticking up through the water. They are believed to assist the tree's breathing during high water, much like a snorkel would help a human. These knees can exceed six feet in height, and, while most of the knees look dead, the pink and orange tips show they are very much alive.



The arched water tupelo



Cypress knees lend an eerie appearance to the swamp

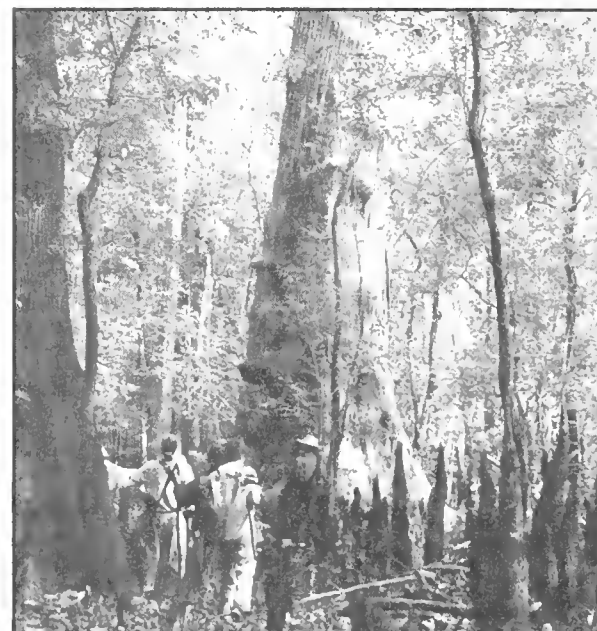
Watermarks on the buttresses suggest that the swamp is flooded for part of the year.

Fallen logs provide a convenient place for herbaceous plants and moss to take root. The plants stay alive when the water rises because the logs, although rotten, still float and the small plants are saved from drowning.

In addition to the logs, several earth banks (called dikes) formed by the periodic flood deposits also provide a safe habitat for small plants and trees such as the red maple, overcup oak, cottonwood, and American elm that are not quite as flood tolerant as bald cypress and water tupelo. One can also find these flood intolerant trees rooted on top of the tupelo and cypress buttresses.

One of the most curious sights was a water tupelo shaped like an arch. Byron Carmean explained that, despite having lost most of its central wooden core, the tree still has sufficient tissue to support a very healthy set of branches and leaves on the top of the arch. Many of the cypress and tupelo trees are hollow, and this arch is an extreme example of a hollow tree.

A sharp eye can discover some small herbaceous plants

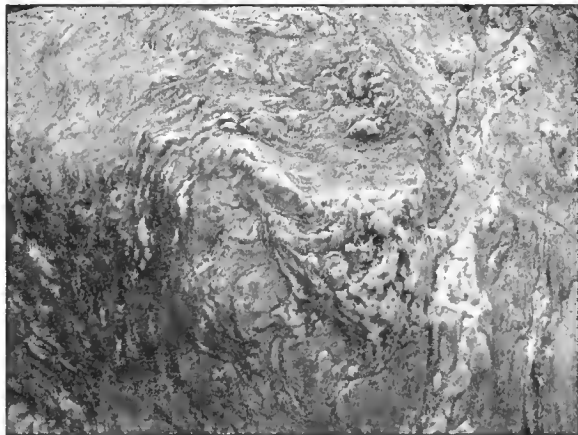
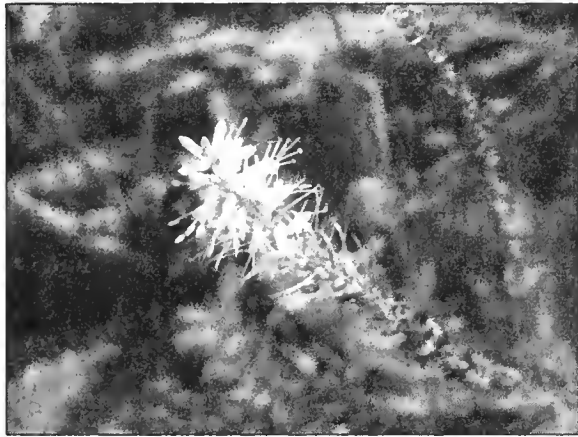
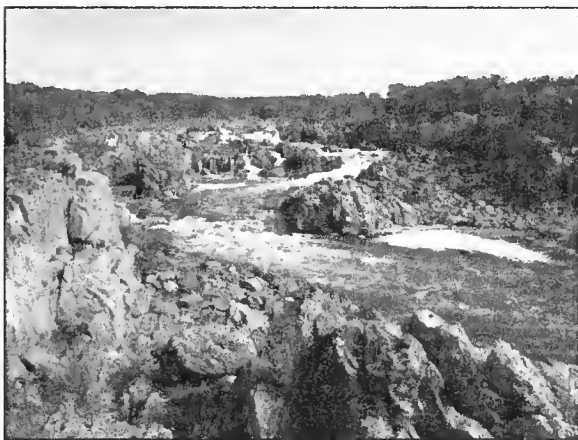
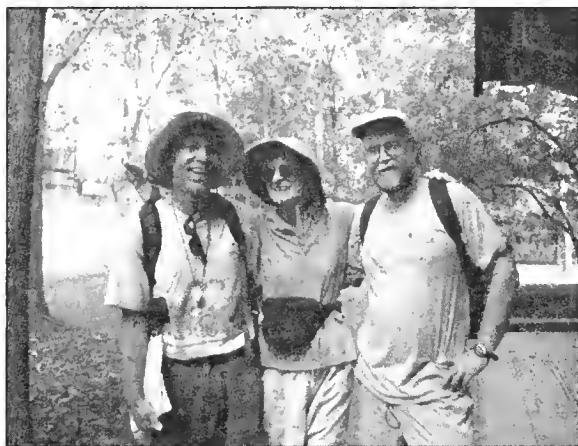


The group pays respect to Big Mama

hitch-hiking in some of the nooks of the arch. This is surely one of the strangest sights in the kingdom of plants. This strange tree is also featured on the back cover of the fascinating *Remarkable Trees of Virginia* book by Nancy Ross (Cypress Bridge, page 7)

VNPS Annual Meeting

Mystery rocks and fantastic fens mark trip



I wanted to share with you some of the “finds” during fieldtrips to the Great Falls National Park and the Barcroft Magnolia Bog that took place during the VNPS Annual Meeting back in September 2008.

Great Falls National Park is located in Great Falls, Virginia, just across the Potomac River from Washington, D.C. If you have never been there, I highly recommend a trip! My desire was to look for native plants along a rock-filled stream. Well, how about a river with boulders and waterfalls! That’s what I got and it was fantastic! In addition, one can’t go wrong when choosing a fieldtrip led by Gary Fleming (vegetation ecologist), Cris Fleming (field ecologist), and Tony Fleming (geologist)! Learning about plants and the geological relationship to their habitats was a treat and quite interesting. We explored the Piedmont/Central Appalachian Riverside Outcrop Prairie and the Potomac Gorge Riverside Outcrop Barrens, as well as some of the nearby woodland. Blooming on the Riverside Outcrop Barren was one of the state’s rarest plants - rock goldenrod (*Solidago racemosa*), growing in the crevices of rocks that contain a bit of soil. Also in bloom were late purple aster (*Symphotrichum patens*) with its rough, clasping leaves, tall coreopsis (*Coreopsis tripteris*), late thoroughwort (*Eupatorium serotinum*), stiff aster (*Ionactis linariifolius*), and purple gerardia/purple false foxglove (*Agalinis purpurea*). This time of year the yellow flowers of Indian grass (*Sorghastrum nutans*) were especially beautiful as they were contrasted by the red and blue hues of little bluestem (*Schizachyrium scoparium*) and big bluestem (*Audropogon gerardii*).

In the woodland area dried pods of hop tree (*Ptelea trifoliata*) and of hop hornbeam (*Ostrya virginiana*), the fruits of hackberry (*Celtis occidentalis*) and arrowwood viburnum (*V. dentatum*), the short, evergreen needles and small cones of Virginia scrub pine (*Pinus virginiana*), as well as the white blossoms of snakeroot (*Ageratiua altissima*) all caught my eye. Also of interest was Bosc’s panicgrass (*Dichanthelium boscii*) – which looks similar to Japanese stiltgrass to an untrained eye.

The Mather Gorge Formation contains mystery rock, or “suspect” rock as Tony referred to it. The swirling folds and major event markings of this rock and terrain do not match any of the rocks and terrain in the surrounding region. The suspect rocks could be from the Precambrian Period and are sometimes referred to as “orphans,” possibly from another continent! In this area the white spikes of Culver’s root (*Veronicastrum virginicum*), the dainty white flowers of flowering spurge (*Euphorbia corollata*), and a significant amount of seed-bearing blue wild indigo (*Baptisia australis*) were surviving the sunny, rocky habitat. (Perhaps a return trip in May is warranted in order to see all that *Baptisia* in bloom!)

Much boneset (*Eupatorium* sp.) was blooming on the rocky shoreline scour zone, as well as an occasional halberdleaf rosemallow (*Hibiscus laevis*). In the riverside scour woodland the bright yellow blossoms of a single riverside goldenrod (*Solidago rupestris*) were guarded from our enthusiastic approaches as Cris didn’t want us to step on this single specimen of this state-rare plant. As we finished the trip along an open trail, meadows of blooming wingstem (*Verbesina alternifolia*) bid us farewell.

Barcroft Magnolia Bog, located in Arlington, is the area’s most significant natural plant community. Magnolia bogs, also called fens, are globally-rare
(See Gorge, page 7)

Photos, from top to bottom, brothers Tony and Gary Fleming, and Cris Fleming (no relation) enjoy a day of botanizing; the Potomac Gorge at Great Falls, VNPSers explore the scour zone in the gorge, Culver’s root was seen in the Mather Gorge Formation; a suspect rock from, another time and, perhaps, another place. Photos by Jan Newton.

•Skunk cabbage

(Continued from page 2)

respiration in animals can be poisoned by cyanide, but thermogenic respiration in skunk cabbages is cyanide resistant. What we would consider a lethal dose of cyanide has scarcely any impact at all on heat production in the lowly skunk cabbage. Cyanide resistance occurs because this plant has an alternative biochemical pathway that, in effect, goes around the steps impaired by cyanide. This alternative pathway, however, fails to provide the cell with the ATP that would have been made via the cyanide-sensitive route. Careful study suggests that most cell respiration in skunk cabbage flower clusters follows the cyanide-resistant path, even in the absence of cyanide (which, of course, is the usual situation out in the swamp), suggesting that production of heat rather than ATP is the primary function of the process, at least in the flower clusters.

One study reports spadix temperatures 15 to 35 C above ambient for a period of two weeks when the ambient temperature ranged from -15 to +15 C. Rates of respiration measured in that study were described as comparable to that of a small mammal of equivalent mass. Unlike a mammal, though, the skunk cabbage spadix does not achieve thermal stability; its temperature rises and falls with ambient temperature but will generally stay elevated above ambient. There is, however, some degree of regula-

tion, demonstrated by the fact that respiratory rates increase with decreasing ambient temperatures. But there are limits. Several days at -5 C or single nights at -10 or -15 C can result in cessation of heat production and freezing of the spadix. Also, very little food/fuel for respiration resides within the spadix itself; when severed from the rhizome, spadix temperatures quickly return to ambient levels.

Skunk cabbage is not unique in its thermogenic capacity. Several members of the arum family (Araceae) to which skunk cabbage belongs have heat-producing spadices, even among tropical species. Also, certain South American night-blooming water lilies (*Nymphaea* species) elevate flower temperatures above ambient levels as part of a complex pollination symbiosis with scarab beetles. Beyond these few examples, though, the phenomenon appears to be quite rare. It is interesting to note that cyanide-resistant respiration, upon which plant thermogenicity is based, is relatively widespread among non-thermogenic plants but its purpose in those species remains obscure.

Four hypotheses have been advanced to explain the adaptive significance of thermogenicity in skunk cabbage: 1) protection of the flowers from freezing; 2) acceleration of development to allow early season flowering; 3) attraction of pollinators by vaporizing scent molecules or by release of carbon dioxide; and 4) providing heat as an attractant or reward (or both) for insect pollinators. Polli-

nation-related explanations are most often-mentioned in casual literature about skunk cabbages but perusal of the scientific literature reveals a paucity of information on the subject. A few bees, beetles, and several kinds of flies have been documented inside skunk cabbage spathes, but whether any of these function as effective pollinators remains to be seen. A study of the Asian species, *Symplocarpus renifolius*, revealed few insects within spathes, overall low levels of pollination, and pollen detected on the bodies of just a single mosquito and a single beetle – certainly not a compelling case for an efficient pollination symbiosis. Obviously, much remains to be learned about the floral biology of skunk cabbages.

The literature on thermogenic respiration in skunk cabbage is surprisingly extensive; the following sources were consulted for this brief overview:

1. Knutson, R. M. 1972. Temperature measurements of the spadix of *Symplocarpus foetidus* (L.) Nutt. Amer. Midl. Nat. 88: 251-254.
2. Knutson, R. M. 1974. Heat production and temperature regulation in eastern skunk cabbage. Science 186: 746-747.
3. Seymour, R. S. and A. J. Baylock. 1999. Switching off the heater: influence of ambient temperature on thermoregulation by eastern skunk cabbage *Symplocarpus foetidus*. J. Exp. Bot. 50: 1525-1532.
4. Uemura, S., K. Ohkawara, G. Kudo, N. Wada, and S. Higashi. 1993. Heat production and cross-pollination of the Asian skunk cabbage *Symplocarpus renifolius* (Araceae). Amer. J. Bot. 80: 635-640.

--W. John Hayden, VNPS Botany Chair

•Flora

(Continued from page 3)

3,500 flora species. A gift of \$4,000 will cover the cost of text preparation of one entire flora family. Work remains on 40 families out of the entire 200 plant families in Virginia. I would be happy to talk with you about the families that remain uncompleted at this time and we would note that flora family sponsorship with your name in the first edition of the book.

Who is waiting for this *Mammal of the Flora of Virginia*? Students and teachers of ecology and botany in high school and college, and natural science

in the lower grades; natural resource managers of public land; professionals who advise developers, legislators, and businesses about habitats, plants, and preservation as well as YOU, the native plant and wildflower public interested in preserving Virginia's natural landscape, and many others who now have no Virginia specific source for what plants are in Virginia, where they can be seen, what they look like, what their habitats are like, and what threats exist to their future existence.

This important project brings to Virginians the botanical reference field

manual that they have not had since 1762 when *Flora Virginica* was published in the Netherlands by Gronovius based on the herbarium of John Clayton of Gloucester, Virginia. That is the springboard to the anticipated publication of a **new** *Flora* for the Old Dominion.

Nicky Staunton

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VNPS 1st VP & director on the board of the Flora of Virginia Project
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•Gorge

(Continued from page 5)

(G1) wetland that consists of wooded seeps, ferns, sedges, blueberries and viburnums. They are often at the bottom of a terrace gravel forest. Upon entering the bog area our leader, Arlington County chief naturalist Greg Zell,

pointed out primrose-leaved violet (*Viola primulifolia*) and various ferns and sedges. We were soon cautioned as a poison sumac (*Toxicodendron vernix*) was identified. Poison sumacs, along with skunk cabbage (*Symplocarpus foetidus*), are plants that are also associated with magnolia bogs. In fact, in the path of a

seep, skunk cabbages were emerging, perhaps making their second debut of the year. Fruiting arrowwood viburnum (*V. dentatum*) was scattered throughout the area, as was spicebush (*Lindera benzoin*) and sweetbay magnolia (*Magnolia virginiana*). As we ventured upland in the terrace gravel forest, we could see the seeps of water trickling out of the hillside. In this area ferns, including N.Y. (*Thelypteris noveboracensis*), lady fern (*A. felix-femina*), and cinnamon (*Osmunda cinnamomea*), were growing along with liverwort (*Hepatica americana*), dittany (*Cunila origanoides*), and horsebalm (*Collinsonia canadensis*). The ridge of the hill was home to a blooming upland boneset (*Eupatorium sessilifolium*). While traversing down the drier side of the hill, we saw blooming silverrod (*Solidago bicolor*), tick-trefoil (*Desmodium canescens*) and yellow pimpernel, as well as fruiting swamp-haw (*Viburnum nudum*). As we worked our way out of the bog area, orange jewelweed (*Impatiens capensis*) was thriving and blooming profusely, serving as a nice finale to a weekend of native plants, education and good company. Many thanks to the Potowmack Chapter for organizing and hosting a wonderful annual meeting.

--Jan Newton, John Clayton Chapter

•Cypress Bridge

(Continued from page 4)

Hugo and Jeff Kirwan (Albemarle Books, 2008). The cypress and tupelo trees grow to a very large size, and some of them are believed to be more than a thousand years old.

One particular bald cypress, called "Big Mama," died last year, but until then was the largest tree in Virginia at 123 feet tall and 12 feet in diameter at the base. The tree is hollow, as Byron proved by beating it like a big drum, and therefore its age could not be scientifically measured. However, as judged by experts, it was at least a thousand years old. Bald cypresses used to be abundant; it is estimated that cypress forests once covered more than 40 million acres in the southeastern United States, but now only 12,000 uncut acres—a more than 99 percent reduction—are left according to Hugo and

Kirwan in their book. The allure to the lumber industry was that the cypress is a sturdy tree and the wood quality, like that of the redwood tree, is excellent.

A partial list of trees and plants seen on the field trip includes: water tupelo (*Nyssa aquatica*), bald cypress (*Taxodium distichum*), red maple (*Acer rubrum*), overcup oak (*Quercus lyrata*), Carolina ash (*Fraxinus caroliniana*), American elm (*Ulmus americana*), water hickory (*Carya aquatica*), parsley hawthorn (*Crataegus marshallii*), possum haw (*Ilex decidua*), Carolina doll's daisy (*Boltonia caroliniana*), American snowbell (*Styrax americanus*), swamp cotton wood (*Populus heterophylla*) (drier areas of the forest), mistletoe (*Phoradendron leucarpum*) and peppervine (*Ampelopsis arborea*).

--Charles Vandervoort

See the address label for your membership expiration date
VNPS Membership/Renewal Form

Name(s) _____

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City _____ State _____ Zip _____

Individual \$30

Student \$15

Family \$40

Associate (groups) \$40*

Patron \$50

Sustaining \$100

Life \$500

*Please designate one person as delegate for Associate membership

To give a gift membership or join additional chapters: Enclose dues, name, address, and chapter (non-voting memberships in any other than your primary chapter are \$5)

I wish to make an additional contribution to VNPS or _____ Chapter in the amount of \$10 \$25 \$50 \$100 \$(Other) _____

Check if you do not wish your name to be exchanged with similar organizations

Check if you do not wish your name to be listed in a chapter directory

Make check payable to VNPS and mail to:

VNPS Membership Chair, Blandy Experimental Farm, 400 Blandy Farm Lane, Unit 2, Blandy, VA 22620

Membership dues are tax deductible in the amount they exceed \$5. Contributions are tax deductible in accordance with IRS regulations

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 The deadline for the next issue is **March 15**

VNPS cordially invites you to participate

VNPS Bruce Peninsula trip, Ontario, Canada, June 6-13, led by Dr. Stanwyn Shetler, Curator of Botany Emeritus, Smithsonian Institution. Cost of the trip is \$1,050 and includes a donation to VNPS. There is a description on the website, or I'd be happy to tell you about it. If you are interested please contact rccsca@comcast.net or 540-722-3072. Reservations with the lodge are already due, so please call soon if you are interested.

VNPS Trip to Southwest Virginia, week of May 10-16. We will be visiting natural areas near Abingdon and Big Stone Gap. This trip is still being firmed up – details will be available soon and posted on the website, or contact the office at vnpsofc@shentel.net or 540-837-1600 for the trip details and cost.

VNPS Annual Workshop will be **March 7** at the University of Richmond's Gottwald Center

for the Sciences, 9:15 a.m.-3:15 p.m. Speakers will focus on Mountaintops and Biodiversity. Members should receive a brochure in the mail, but if you missed yours contact the office to register.

VNPS State Field Trip to Crow's Nest. See this area from the water! Date and time TBA.

May 2 Invasive Species Removal Day. Online information is being developed for the Virginia Master Naturalist website www.virginiamasternaturalist.org/service.html, and several VNPS chapters plan to hold events. Watch for more information.

2009 VNPS Annual Meeting will be hosted by the Blue Ridge Chapter with New River Chapter assisting on September 25-27 in Salem. Saturday's banquet will feature Doug Tallamy, author of *Bringing Nature Home*. A full meeting schedule and information will appear in our summer issue and online.


Give a free VNPS gift membership in 2009

During 2009, any new or renewing VNPS member can sign up an **additional friend**, family member, natural resource manager or other deserving individual for an identical yearlong membership at **no additional cost!** Pass on your love of Virginia's natural places with the gift that helps conserve the Old Dominion's *Wild Flowers* and *Wild Places*.

The recipient of your gift will receive a letter informing them of your gift, along with our new member packet. The membership will be good for one full year of benefits, including invitations to state and chapter events and newsletters. This offer may be used to give Student, Individual, or Family memberships.

All renewing members should receive a form with their renewal. If you are a new member in 2009 and missed this offer when you joined, contact the office to participate. And remember, there is always a membership form on page 7 of this newsletter. Life members may also give the gift membership.

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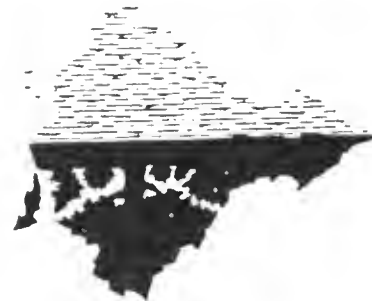
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Bulletin

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Conserving wild flowers and wild places

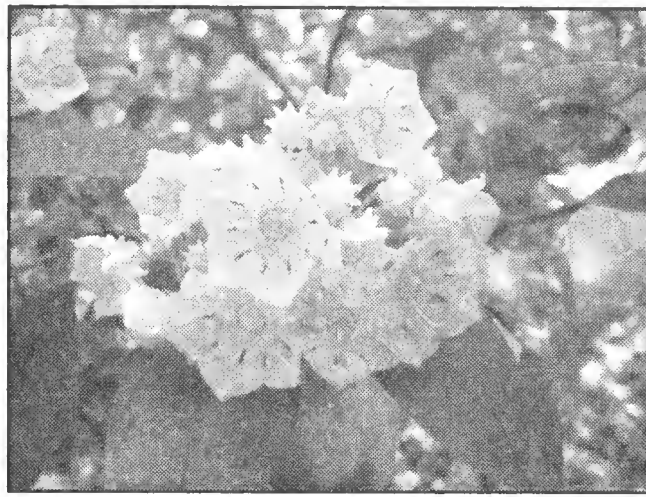
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VNPS Annual Meeting heads to the mountains

The 2009 VNPS Annual Meeting is being co-hosted by the Blue Ridge Wildflower Society and the recently formed New River Chapter. It will be held at the Salem Civic Center September 25-27. Festivities will begin on Friday evening, September 25, with a reception and speaker. The speaker will be Peter Heus, owner of Enchanters Garden in Hinton, W.Va. Peter has an outstanding garden of natives that he has propagated. He will speak on propagation. You can see what Enchanters Garden has to offer at www.enchantersgarden.com.

Saturday, September 26, will feature a variety of walks to many diverse areas. There will be walks focusing on butterflies and wildflowers, plant and insect relationships, and several wetland areas will be visited. Yes, we do have wetlands in the mountains. Jeff Kirwan, one of the authors of the new book, *Remarkable Trees of Virginia*, will lead a trip to see several trees featured in this publication. We have Nature Conservancy Reserves and Natural Heritage areas that will be highlighted during the weekend. Several rare plants are found in these areas, as well as special geologic features. There will be walks to the Virginia

(See Annual Meeting, page 8)



Spring has Sprung! Native plant events are popping up all over the state. Check out our website (www.vnps.org) or page 3 of this issue or sign up for one of the field trips below. Photos of mountain laurel, above, and Jack-in-the-pulpit, by Jan Newton.

Take a trip into the wild with VNPS

CROW'S NEST

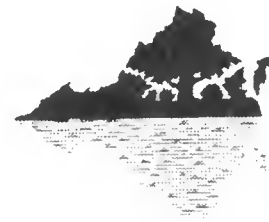
Join VNPS at opposite ends of the state to explore and celebrate Virginia's natural heritage during May. Hal Wiggins will lead a VNPS trip to the new Crow's Nest Natural Area Preserve on Sunday May 3. Find information about the preserve, which has been featured in previous *Bulletins* on several occasions, at: http://www.dcr.virginia.gov/natural_heritage/natural_area_preserves/crowsnest.shtml. Participants will meet at the headquarters of a Fredericksburg river outfitter. While there, Hal will make a presentation and all will be outfitted with personal floatation devices. From there, we will travel to Potomac Creek for a tidal/flatwater paddle to Crow's Nest. We will walk part of the preserve.

The trip will be an all day adventure. We will meet at 9:30 a.m. in Fredericksburg and return about 5 p.m. Hal Wiggins is a member of VNPS, long time advocate for Crow's Nest and author of *Virginia Native Plants* and *A Field Guide to Crow's Nest*. This field trip is a special opportunity to visit the area with a guide who has explored it for many years.

(See VNPS trips, page 4)

INSIDE: Fight Virginia's noxious weeds; more on skunk cabbage

From the president



Native plant news is everywhere

Happy Spring, and I'd like first to extend a hearty thanks to all who planned, worked, participated or spoke at our Annual Workshop, especially our organizer Shirley Gay. It was such an enjoyable experience. I'm sorry we could not seat everyone who wanted to come. Perhaps next year we will be able use technology to allow others to view or listen to the speakers virtually. Chris Ludwig's presentation from the workshop can be viewed on the Flora of Virginia website.

Remember to save the date for our upcoming **Annual Meeting, September 25-27 in Salem** (Roanoke area) hosted by the Blue Ridge Wildflower Society and New River Chapter. As usual, we will be electing our new board members, and have several positions available. If you are interested in participating please let me know.

We have begun our 2009 fundraising campaign, called the 'Natural Treasures Hunt' and we hope to generate considerable support for a project that our Natural Heritage Program wants to begin. Plants known from literature or herbarium specimens that have gone unseen for decades will be investigated as time and money allow, and the plants will be properly vouchered and recorded. This is a necessary step for being able to conserve these plants, which are rare in Virginia.

Virginia now has six new Wilderness Areas and two Scenic Areas in the Jefferson National Forest. Congress passed an omnibus bill in March that ended years of hard work. But the work never ends, and now the George Washington National Forest Plan Wilderness and Scenic Area work is under way. Among several areas being looked at is the Shenandoah Mountain Proposal that would protect 115,000 acres of the forest between Routes 33 and 250, all the backcountry from Harrisonburg to Staunton, as a scenic area with several embedded wilderness areas. This has allowed a coalition of hikers and mountain bikers to join forces for protection. See www.vawilderness.org for more information.

Winter is a time for getting some reading done, and because we are in a newsletter exchange with many organizations, I see newsletters from native plant societies and others across the country. Here are just a few gleanings from that stack (and it's still a big stack). From nearby: The Potomack newsletter announced the rediscovery of sugar cane plumegrass (*Saccharum giganteum*) at Huntley Meadows in Fairfax County. Most of the specimens in collections from the region were more than 100 years old, the most recent from 1973.

The Virginia Nursery and Landscape Association (VNLA) Newsletter, Vol. 78 No. 1 from a year ago, has a series of Certified Horticulturist continuing education quiz articles, this one on wetlands. It was a comprehensive review of wetland characteristics, definitions, wetland policy and Virginia's wetland management programs (Virginia Tech Publication 448-106, www.ext.vt.edu/pubs/waterquality/448-106/448-106.html).

The Audubon Naturalist Society (Oct/Nov 08, www.audubonnaturalist.org/default.asp?page=676#Oct), in a column titled 'Ideas for Earth-Friendly Living', talks about the toxic components of computers and what is being done to reduce toxins in manufacture. The article suggests using a computer search of 'greener electronics' to see comparisons.

And from a little farther away: **On the Fringe**, the Journal of the Native Plant Society of Northeastern Ohio (Dec 08), (sorry I cannot find a web link for this one, ask our office for a copy) reprinted a 1985 New England Wildflower Society article called 'Plant Preservation: An Historical Perspective.' This was an overview of days when many of the native plant societies were formed. Ruthless development, 'improving' wetlands and digging of rare plants by uneducated gardeners as well as wild harvesting for nurseries were early concerns.

From West Virginia's Friends of Blackwater (Oct 08, www.saveblackwater.org/Newsletters.html) 'Yellowtop Blooming' by J. Lawrence Smith tells of Thomas Edison's use of goldenrod to make a rubber substitute, which apparently never interested manufacturers. The VNPS participation in the Kansas NPS Coblenz Prairie Foray is documented in their Summer 08 newsletter (www.kansasnativeplantsociety.org/newsletters.htm), with photos of federally listed Mead's milkweed (*Asclepius meadii*) and hairy fimbry (*Fimbrisylis puberula*).

From California NPS newsletter (Vol 38 #2, April-June 08, www.cnps.org/cnps/publications/cnpsbulletin/index.php) there is an article called 'A Natural Connection: Taking the small leap from native plant gardening to sustainable landscaping.' They suggest a website called landscapestandards.com. A more national effort to look at is the Sustainable Sites Initiative developed by the American Society of Landscape Architects, the Lady Bird Johnson Wildflower Center and the United States Botanic Garden (www.sustainable-sites.org).

Finally, I wound up rereading an old article that I have kept since December 07 from **Native Notes** from the West Virginia NPS (available at www.wvnps.org/newsletters.html). 'In Defense of - Nay - In Praise of Scruffy Species' by Doug Wood features a few common trees such as Virginia pine, black locust and boxelder (one of the plants I'm following for Project Budburst). It highlights the importance some of these less appreciated species have for our environment.

As you can see, many of these groups have placed these articles online, so look for a native plant society or other group at your vacation destination to learn more about the place you visit, and happy reading!

Your President, Sally Anderson

Virginia Wildflower Celebration 2009

The 13 chapters of the Virginia Native Plant Society celebrate the rich diversity of the native flora of the Commonwealth each spring. Society members will share their enthusiasm for wild plants and wild places on field trips and wildflower walks, and during garden tours, plant sales, and a variety of other programs throughout the state.

You are cordially invited to any of the activities listed below; they are all open to the public. As some events require reservations, fees or additional instructions, use the contacts provided to obtain further information. Plants propagated by members will be available at chapter plant sales.

As you travel about the state, watch for the 2009 VNPS Wildflower of the Year, skunk cabbage (*Symplocarpus foetidus*). It occurs throughout much of the northeastern U.S. and has been documented in most of Virginia's counties. Perhaps you can add to that list of documented sites. Skunk cabbage is a winter bloomer, but you can find its broad green, cabbage-like leaves in its favorite wetland habitat throughout the spring, summer, and fall.

Wildflower Calendar of Events

Wildflower Weekend Webster County, W.Va. - May 1-3, Camp Ceaser Visit Webster County W.Va. website or contact Jay Shaner (Shenandoah) 540-886-5763.

John Clayton York River State Park - Saturday May 2, 10 a.m. Expect to see the flowers of trailing arbutus, hawkweed, blue-eyed grass, American holly, and mayapple during this 1.5 mile walk on fairly rugged, hilly terrain. To get to York River State Park, take the Croaker exit off of I-64. After about .9 miles, right on Riverview Road and continue about 1.6 miles, then left on York River Park Road. Meet in front of the visitor's center at the end of the road. Park entrance fee of \$3 so carpooling is recommended. Register by calling 757-604-1026 or emailing claytonsnatives@yahoo.com. More info at www.claytonvnps.org.

Invasive Plant Removal Day at Bland - Saturday May 2, 9-noon, sponsored by Virginia Master Naturalists and Virginia Native Plant Society. To participate call Kim at 540-837-1758 ext. 234.

Trillium Trek to Linden, Virginia - Sunday May 3, 8:30 a.m.-4 p.m. Travel to Linden, Va., to see one of the largest great white trillium displays in the world in an area resplendent with many wildflowers and trees, including native orchids. Somewhat rocky two-mile trail; dress for hiking; bring water and a bag lunch. \$25 fee due upon registration. Van leaves from Lubber Run Center parking lot, 300 N Park Dr. Arlington, VA 22203 or picks up from Ballston Metro Station with advance request: Register on-line <https://registration.arlingtonva.us/vsiwebtrac.html> or call 703-228-4747. Program # 632504D.

Blue Ridge Wildflower Society Spring Wildflower Sale - Saturday May 9, 9 a.m.-noon. Virginia Western Community College in parking lot behind the greenhouse.

Butterfly Gardening for Beginners - Saturday May 9, 10 a.m., Hidden Oaks Nature Center. Discover how you can attract butterflies and hummingbirds to your backyard by providing the host and nectar plants for native butterflies. Learn how to create your own backyard habitat and start host plants for monarch butterflies. Classroom and garden experience included. For more information visit www.fairfaxcounty.gov/parks/hiddenoaks/

Native Plant Sale - Saturday May 9, Friends of Riverbend Park in Fairfax County will hold its annual Native Plant Sale at the Grange in Great Falls. For more information visit www.fairfaxcounty.gov/parks/riverbend/

Shenandoah National Park Wildflower Weekend - May 9-10, complete schedule on park website www.nps.gov/shen

Prince William Wildflower Society Annual Native Plant Sale - Saturday May 9, 9 a.m.-noon, Bethel Lutheran Church grounds, 8712 Plantation Lane, Manassas. For information, contact Nancy Vehrs at pwws.vnps@yahoo.com, 703-368-2898 or Nancy Arrington at 703-368-8431.

John Clayton Freedom Park - Saturday May 9, 10 a.m. Walk through Freedom Park in James City County with hopes of seeing deerberry, mountain laurel, partridge berry, inkberry, and lyre-leaf sage in bloom. The somewhat hilly walk will be about 1.5 miles along dirt paths. Entrance to Freedom Park is at the intersection of Longhill Rd. and Centerville Road, northwest of Williamsburg. Meet at the parking lot at end of entrance road. To register 757-604-1026 or claytonsnatives@yahoo.com. More info at www.claytonvnps.org.

Garden Fair 2009 at Bland - Saturday & Sunday May 9-10, 9-4:30 p.m., Native plant vendors, items for home

and garden, children's activities, food. For information www.virginia.edu/Blandy or 540-837-1758 ext 0.

Shenandoah Chapter Social Hone Quarry - Thursday May 14, Picnic Shelter. For details, call 540-289-6801.

26th Annual Spring Wildflower Symposium - May 15-17, at Wintergreen Resort and sponsored by the Wintergreen Nature Foundation (www.twnf.org).

Blue Ridge Wildflower Society Lapsley's Run-Roaring Run Field Trip - Saturday May 23, meet at 9 a.m. for day-long trip in the Jefferson NF. Join Butch Kelly for this Jefferson Forest trip that includes shale barrens and waterfalls. Meet at Botetourt Commons next to Bojangles off U.S. 220 north of Danville. Parking is limited so carpool. For information contact Kelly at 540-384-7429.

Blue Ridge Wildflower Society Rhododendron Day on the Parkway - Saturday June 6. Meet at Peaks of Otter Visitor Center at 10 a.m. to go overlook hopping or at 8 a.m. for breakfast at the lodge first. Rudy Albert (540-774-2279) is the trip leader.

Shenandoah Chapter Cranberry Glades Botanical Area, Monogehela National Forest, W.Va. - Saturday July 11, 8 a.m. Leader Jay Shaner. Visit Cranberry Glades to see many acid loving plants some at the extreme southern end of their range. Several orchids might be in bloom. Meet in Buffalo Gap, ¾ mile past the intersection of Rts. 42 and 688 at small white church on the right. Bring water, lunch and hiking boots. Approximately 2.5 hour drive one way with a 4-5 hour outing at several locations in Cranberry Glades. To carpool from Staunton area contact Jay Shaner 540-886-5763; from Harrisonburg area contact Chris Bowlen 540-289-6801.

Ancient forest protected by Virginia

Roughly 380 acres along the Nottoway River are now preserved as Cypress Bridge Swamp Natural Area Preserve by the Virginia Department of Conservation and Recreation. (For more information about this natural area, read about the VNPS trip in the last *Bulletin* issue.) This tract of land is home to many of the largest trees in Virginia, with some reaching nearly 100 feet in height and 12 feet in width. The property also includes the previous record-holder of Virginia's largest tree: the bald cypress called "Big Mama," which is deceased but should remain standing for decades.

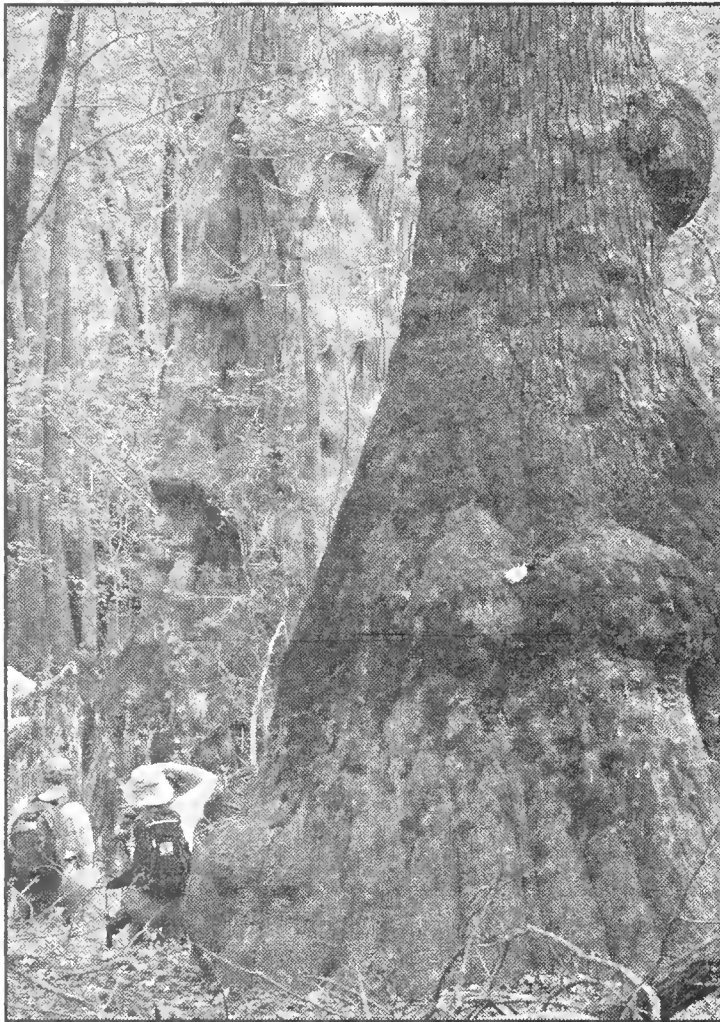
Cypress Bridge Swamp becomes the 57th site dedicated to Virginia's Natural Area Preserve System, which is managed by DCR's Natural Heritage staff. The system provides protection for outstanding examples of natural communities and rare, threatened and endangered species. Natural Heritage ecologists discovered the site in November 2005, and DCR bought the preserve from Sustainable Forests LLC using a combination of funds from the Virginia Public Building Authority Bond and a grant from an anonymous private donation.

Joseph H. Maroon, DCR director, said, "Sustainable Forests has kept this property in pristine condition for many years, and the

Commonwealth is pleased to be able to protect it in perpetuity."

The land borders three miles of the Nottoway River, and 40 acres in the swamp have never been harvested. DCR scientists estimate that some of these trees are more than 1,000 years old.

Tom Smith, director of DCR's Natural Heritage Program, said, "By protecting this tract of land, we're saving a
(See *Treasures*, page 8)



(Photo courtesy Gary P. Fleming, Virginia Department of Conservation and Recreation)

Botanical and biographical exhibit on display

The work of regional artists and researchers as they have documented the life of Lucy Meriwether Lewis Marks in the role as a doctress during her time will be on display from May 3-November 12 at the Jefferson Library in Charlottesville, Va. Contemporary botanical artworks of herbal plants that were likely used during Lucy's era will be on display. A portrait of Lucy, painted in 1837 by John Toole, will also be featured in the exhibit.

Participating artists include Christine Andreae, Debbie Bankert, Janet Brome, Esther Carpi, Meta Carr, Wendy Cortesi, Lara Call Gastinger, Eileen Malone-Brown, Vicki Malone, and Gail McIntosh.

The exhibit will open May 3 with an artist's reception (2-5 p.m.) and feature two symposiums during the time the exhibit is up. The first symposium (Lucy Meriwether Lewis Marks: Sustaining a Plantation Community) will be held on May 30 (1:30-4:30). The second symposium (The Artists Speak: Creative Views on Botanical Art), will be held on October 4 (1-4). For further information about this exhibit and the symposiums, contact the Jefferson Library at 434-984-7540 or library@monticello.org.

VNPS trips provide in-depth look at state's unique places

(Continued from page 1)

The trip cost is \$25, which covers canoe, transport and a donation. Limit 18 people. Rain or shine, except for severe weather. Reservations necessary; contact the VNPS office at 540-837-1600, vnpsofc@shentel.net.

SOUTHWEST VIRGINIA

From Sunday May 10 to Saturday May 16 head to the southern Ridge and Valley of Virginia, a place of high mountains and diverse valleys. We will visit National Forests and Recreation Areas, Natural Area Preserves and a State Park, and will see

some of our tallest mountains and a natural limestone tunnel. The Southern Appalachians are a hotspot of biological diversity, and our tour will include parts of the Clinch River drainage, noted for diversity of aquatic species and home to state and globally rare plants and habitats.

Although in mountainous terrain, the hikes will be very moderately paced and will focus on the plant life. However, some hikes will be a few miles in length at high altitude, so some physical stamina is necessary. Naturalist led tours in the

morning to early afternoon will be followed by leisurely explorations later in the day.

We will spend half of the week in Abingdon and half in Big Stone Gap. Cost of the trip is \$500, which includes a \$100 donation to VNPS. Price includes lodging (2 people per room), tours and lunches. Travel to and from the trip is on your own. We will do our best to arrange carpools from our lodgings to the sites each day to minimize fuel use and parking needs. Reservations necessary; contact the VNPS office at 540-837-1600, vnpsofc@shentel.net.

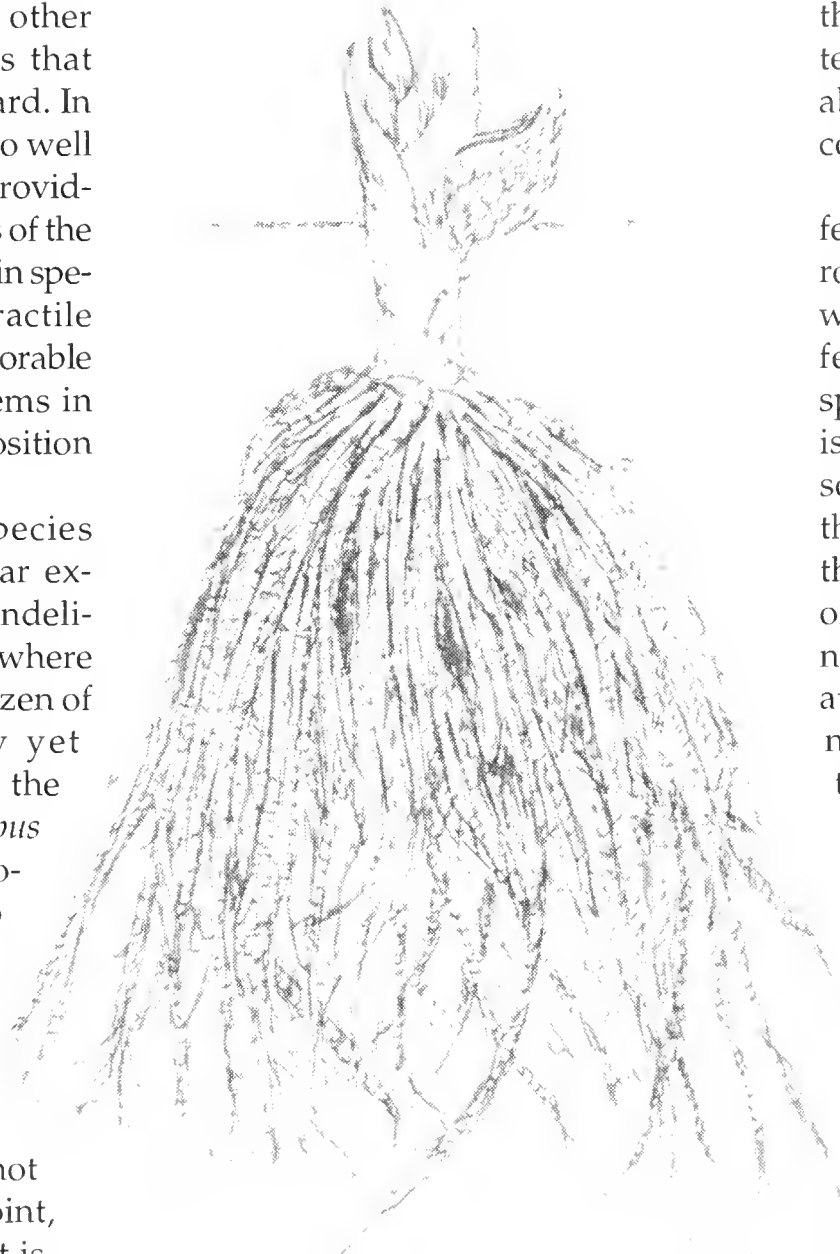
Contractile roots give skunk cabbage another special trait

I can remember the first time I ever heard of contractile roots. It was in graduate school at the University of Maryland and a friend of mine was busy preparing a lecture on roots. He said to me something like "Did you ever notice, while pulling up dandelions, that the darn weed seems to be pulling back? As it turns out, it is!" Strange but true, dandelions, along with a diverse assemblage of other species, have contractile roots that serve to pull the plant downward. In this capacity, contractile roots go well beyond the routine function of providing anchorage for aerial portions of the plant body. For plants with certain specialized growth habits, contractile roots serve to counteract the inexorable upward growth of shoot systems in order to maintain a preferred position relative to the soil surface.

Many rosette-bearing species have contractile roots. Familiar examples include the dreaded dandelions that seem to spring from nowhere in our lawns and also that denizen of swampy mires, our quirky yet loveable VNPS Wildflower of the Year, skunk cabbage (*Symplocarpus foetidus*). For dandelions, the rosette habit is an adaptation to survive grazing and, incidentally, the whirling blades of lawnmowers. Hungry herbivores, like cows or sheep, may easily consume some dandelion leaves, but they are not likely to nip off the growing point, the apical meristem, because it is located at or slightly below soil level. With its meristem intact, lost leaves can be quickly replaced and the hardy dandelion persists, as any lawn caregiver will attest. Shoot apical meristems inevitably grow upward, incrementally, perhaps, in rosette plants, but upward nevertheless. Without their large contractile tap roots, dandelion meristems would eventually project significantly above soil level and thus become vulnerable to hungry herbivores or lawn mower blades.

The situation with skunk cabbage is slightly different. Rosettes of skunk cabbage leaves arise from the tips of

Hunker down & Hold on



Drawing by Craig Holdrege, "Skunk Cabbage (*Symplocarpus foetidus*)" /lu Context /#4, 2000 (online: <http://www.natureinstitute.org/pub/ic/ic4/skunkcabbage.htm>)

fairly massive vertically-oriented rhizomes from which contractile roots project laterally and downward. These roots are thick, cord-like, and unbranched for most of their length; the tips, however, bear clusters of fine roots that act like anchors while the unbranched segment contracts, pulling the rhizome inexorably downward. Thus, while an individual skunk cabbage plant may be decades old, the growing tip of its massive rhizome never grows above the mud or water

surface. For skunk cabbage, in addition to the anchorage that contractile roots provide, there may be another advantage, thermal protection for the apical meristem—even when frozen solid, muddy soils and shallow water will often be warm relative to the air just inches above, especially during extremely cold winter nights. Note: skunk cabbage flowers are thermogenic, but the rhizomes are not, so thermal protection of meristems seems a reasonable explanation for the function of contractile roots in these plants.

The common garden gladiolus offers yet another example of contractile roots. In warm climates, glads can overwinter as dormant corms positioned a few inches deep in the soil. In the spring, stored food in the corm nourishes rapid growth of leaves, followed soon by a flower stalk. Depleted by these efforts, the old corm shrivels and the plant builds a new corm atop the old one, storing masses of starch for next year's growth. By the following autumn, the old corm is shriveled, but not completely gone, so the position of the new corm is incrementally shallower than its predecessor. Without contractile roots that diverge from the base of new corms, and pull the developing corm slightly downward, gladiolus corms would eventually come to lie on the soil surface, losing the protection and anchorage that would have been provided by a few inches of soil.

Not all roots capable of contraction do so by the same mechanism. They all seem to grow normally at first, elongating, and achieving typical-looking mature tissues well before contraction begins. Most commonly, downward forces are generated by parenchyma cells in the cortex region of the root. Deposition of additional layers of cell wall material in special patterns results in the radial expansion of these cortex cells. Overall, the root gets thicker and, simultaneously, shorter. In extreme cases, contracting roots can lose as much as two-thirds of their length. In some desert plants the mechanism can be a little different: fleshy living roots formed during

(See Root system, page 8)

Cooperative effort targets invasive plant species

The Virginia Master Naturalists and the Virginia Native Plant Society announce the first-ever statewide Invasive Plant Removal Day. The program will take place at locations all over the state on Saturday, May 2. Information can be found online at: www.virginiamasternaturalist.org/invasives/index.html. As of now, there are about 20 projects around much of the state. If you are unaware of whether your chapter is planning anything, please contact the chapter and consider helping develop a local project. If you would like to list your project, fill in and submit the online form, and it will be checked and posted.

Invasive species are, generally, non-native species that cause ecological or economical harm because they lack natural enemies and pathogens that controlled them in their native sites. They share certain characteristics, such as being able to mature quickly, generate many offspring and can tolerate a wide range of habitats. Because of the characteristics that allow a species to successfully establish in new territory, invasive species make terrible neighbors. They out-compete native species for the same resources, eventually harming trees, wildlife and water quality.

Invasives have taken a firm foothold in many parts of the state and everyone's help is needed to reclaim our natural areas. Removing invasive plants and sowing native flora is a fantastic way to restore water quality and wildlife habitat in any biome. There are activities planned throughout Virginia including Arlington County, Charlottesville, Fairfax County, Falls Church, Reston and Alexandria. More sites will be added throughout the spring; check the web page to find a location to volunteer near you, or add your own site.

Worst invasive threats to southern forests named

U.S. Forest Service Southern Research Station (SRS) Ecologist Jim Miller, Ph.D., one of the foremost authorities on nonnative plants in the South, recently identified the invasive plant species he believes pose the biggest threats to southern forest ecosystems in 2009. "Cogongrass, tallowtree, and Japanese climbing fern are among the fastest moving and most destructive nonnative plant species facing many southern landowners this year," said Miller. "Rounding out the top five invasive species that I'm very concerned about would be tree-of-heaven and nonnative privets. While our forests are besieged by numerous invasive plants, these and other nonnative species present serious financial and ecological threats to the South and its forests in 2009."

Nonnative species often out-compete native forest plants and may degrade forest productivity, wildlife habitat, recreational values, and water quality. Invasive species also greatly increase expenses as public and private land managers work to combat their spread and deal with their effects (such as increased wildfire risk and severity).

Nonnative plants can be introduced and spread by wildlife or through other natural means. Humans also spread invasive species by planting them in their gardens and yards and

by seeds hitchhiking on their clothes. Additionally, tractors and mowers used in multiple locations without being cleaned often spread nonnative plants.

In an effort to inform forest managers, landowners, and others about where the most threatening invasive plants are in the South and to help them prepare for these threats, Miller collabo-

rated with SRS Forest Inventory and Analysis (FIA) scientists to develop maps showing the spread, county-by-county, across the Southeast of more than 30 of the most serious nonnative plant species. The invasive plant data were collected on FIA plots throughout the southern United States in cooperation with state

(See Follow, page 7)

Be on the lookout for loosestrife at nurseries

The coming of spring means an increased vigilance against Virginia's only state-wide listed noxious weed, *Lythrum salicaria*. *Lythrum* listing is statewide because it is a major threat to natural resources such as wetlands, rivers, and streams across Virginia. The plant entered the state through nursery sales. If you find a nursery that is selling loosestrife (*Lythrum salicaria* and *Lythrum virgatum*), try to educate that business about the harm that is caused by this plant. If they continue to sell loosestrife, report the name, location of the nursery and date to the Virginia Department of Agriculture and Consumer Services at 1-804-786-3515.

In reading the *Journal of the Virginia Nursery and Landscape Association*, it appears that an appreciation has developed regarding use of native plants and discontinuing use of violently aggressive non-native plants. It would be fair to say that not all small nurseries get this journal and interaction/education by VNPS members shopping at local nurseries can be very valuable.

When you locate loosestrife on public land, notify both the agency responsible for the land and VDACS. When it is in favorite gardens, a gentle mention that the plant is Virginia's only noxious weed and freely escapes to natural wetlands and chokes out native plants that wetland birds/mammals/insects depend upon for food/shelter is helpful. Download and distribute the flyer from either the VA DCR site or plants.usda.gov/java/profile?symbol=LYSA2 or: <http://www.nps.gov/plants/alien/fact/lysa1.htm>

Although loosestrife is the only statewide noxious weed listing, Virginia legislation does allow localities to control the following invasives: Johnson grass (*Sorghum halepense*); multiflora rose (*Rosa multiflora*) and musk thistle, (*Carduus nutans*). These weeds affect farmlands and natural areas.

Flora project moves on despite economy

Work on the Flora of Virginia proceeds apace. We have reached another milestone: we have begun to talk in terms of “light at the end of the tunnel” and “perfecting the manuscript”! There are still gaps aplenty, but they are being filled, and we find ourselves discussing when to begin copy editing, concentrating on publication and looking a little beyond.

We’re beginning to flesh out our education mission, talking with the Master Naturalist and Master Gardener programs about new teaching units based on the Flora of Virginia. Other educational projects are envisioned, for community education and for K-12. And until we have the Flora in hand, in 2012, draft sections of the Flora will work fine for these projects.

The Flora of Virginia website, www.floraofvirginia.org, is going to provide important new services to an expanded audience. In its recent redesign, you’ll see that this shift has begun, with new sections on the plants of the state and news about the Flora Project. Eventually, these will be expanded, offering forums in which people using the Flora may discuss their experiences, report errors and other concerns, and

(See *Flora Project*, page 8)



Follow major invasive threats to southern forests online

(Continued from page 6)

forestry agencies. In partnership with the University of Georgia’s Center for Invasive Species Science and Ecosystem Health, SRS researchers recently posted the maps and occupation levels online.

Maps posted at <http://www.invasive.org/fiamaps/acres.cfm> show the number of acres in a county covered by each nonnative species. Maps posted online at <http://www.invasive.org/fiamaps/percent.cfm> show the percent of subplots analyzed in a county that have each invasive species. A spreadsheet

found at <http://www.invasive.org/fiamaps/summary.pdf> shows the total acreage of 33 invasive plant species in 12 Southeastern States (data for eastern Oklahoma is missing as SRS FIA just completed this part of the state’s inventory this month). Users can access the maps and spreadsheet via <http://www.invasive.org/fiamaps/>. Current plans are for researchers to update the information annually.

Miller hopes government agencies, forest managers, natural resource professionals, landowners, students, and others will use the information to help

combat the spread of nonnative plant species in southern forest and grassland ecosystems.

Details on the five invasive plants mentioned above can be found online via: http://www.srs.fs.usda.gov/pubs/gtr/gtr_srs062/. The web page features Jim Miller’s book titled *Nonnative Invasive Plants of Southern Forests: A Field Guide for Identification and Control*, published in 2003. Based in Auburn, Alabama, Miller is a scientist in the SRS Insects, Diseases, and Invasive Plants of Southern Forests unit.

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The deadline for the next issue is **May 1**

Native grass growers sought for project

Jake Hughes, a representative of the Shenandoah National Park, is looking for some volunteers for a park seed propagation project. The targets of the project are native grasses: little bluestem, Indian grass, purpletop, poverty oatgrass, and hairgrass. The plants will be introduced into several sites in the Shenandoah National Park. Jake will provide supplies including seeds collected from sources within the park; all you need is your green thumb and the ability to accommodate an 8 inch by 8 inch container(s) on your window sill or growing area. Contact Jake at 540-999-3500, ex. 3492 or jake_hughes@nps.gov for more information.

• Treasures

(Continued from page 4)

biological treasure that takes any visitor on a trip back in time. The site has the largest Carolina ash in the nation, the largest swamp cottonwood in the state, and a state-rare plant called the shade mudflower."

No public access facilities are planned for the property. Access to the site may be arranged through Darren Loomis, southeast region natural areas steward, at 757-925-2318 or darren.loomis@dcr.virginia.gov.

• Annual Meeting

(Continued from page 1)

Western Community College Arboretum, and the Blue Ridge Parkway will host a trip. One trip will take a look at roadside ditches and a newly designated natural area in the Jefferson National Forest.

On the evening of September 26 we plan to have a silent auction to raise money for the Flora of Virginia Project. Bring extra cash. This will be followed by a banquet and the annual meeting. The evening will culminate with our featured speaker, Professor Doug Tallamy from the University of Delaware. Doug is the author of the book *Bringing Nature Home*.

There is a block of 40 rooms with queen beds or 2 double beds reserved at the LaQuinta Inn in Salem. We look forward to seeing many familiar and new faces at this year's annual meeting.

Butch Kelly, Blue Ridge Wildflower Society

• Root system

(Continued from page 5)

the wet season push soil aside, when these same roots die in the dry season, their desiccation results in contraction, pulling the plant crown downward.

Roots, being out of sight, are too often out of mind. Who would have guessed that such disparate plants as garden gladiolus, dandelion, and skunk cabbage share much of anything in common? Each, however, has its own version of contractile roots by which they can hunker down and survive to flower another day.

W. John Hayden, VNPS Botany Chair

• Flora Project

(Continued from page 7)

learn of corrections and of developments in taxonomy. Teachers, likewise, will be able to communicate with one another, students, and Flora Project staff.

It's disheartening to feel the economic crunch just as we're hitting our stride. Cuts in state funding and heightened competition for grants have placed a greater financial burden on the Flora Project. We appreciate the support we receive from you, and in this season of renewal, we hope you'll renew your support of the Flora Project. More information about giving may be found on the website. Or call me, Bland Crowder, at 804-371-5561.

Bland Crowder, Flora of Virginia editor

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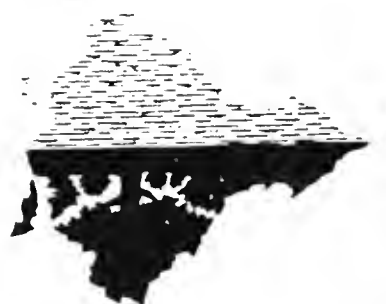
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A swallowtail butterfly nectars on showy orchis (*Galearis spectabilis*). (All photos by Sally Anderson)



Our group: Sally Anderson, Judy Falk, Marjorie Prochaska, Carrie Blair, John Fry, kneeling is Robin Blair.

The Smokies dazzle visitors from Virginia

The wildflower display in the Great Smoky Mountains National Park had reached mythic proportions for me, so when the idea came up that several of us from the Piedmont Chapter might go, I jumped at the chance. Six of us drove down for the five-day event April 22-26. We registered online for our guided walks, choosing from over 150 morning, afternoon or full day hikes. The pace was generally gentle. Strenuous hikes were labeled as such, so we avoided those. Shorter hikes were two to three miles long. Our longest hikes were six to seven miles up the fabled Porter's Creek Trail and to see the old trees in

Albright Grove. The guides were terrific. Many had connections with the University of Tennessee and have been leading hikes for years.

Each day one plant in particular dazzled. First it was the dwarf crested iris, *Iris cristata*. We allowed as how we had never seen anything like it—whole beds of it in places—and I wanted it for my home garden! The next day it was false Solomon's seal, now Solomon's plume, *Maianthemum racemosum*. Who would have thought this plant could bring so much joy? We saw it everywhere—huge and majestic—and when it was interleaved with Maidenhair fern, *Adiantum pedatum*, competing success-

fully for space and attention on our last day, we shook our heads in amazement.

Did I mention the sedums and the sedges? *Sedum ternatum* was blooming everywhere—sun and shade—and I want that, too, for my garden. And how can one forget the seer-sucker sedge, *Carex plantaginea*? The name alone brings a smile, but when arrayed on a hillside in a grand descending triangle, looking for all like a landscape designer's pièce de résistance, one nods humbly to that Great Designer in the Sky. We saw, too, the rare Fraser's sedge, (See Nature's extravaganza, page 6)

INSIDE: Flora still important to Clayton descendants, p. 3

From the president

VNPS is about plants and plant people

Dear VNPSers

We had a very successful trip to Southwest Virginia in mid May. The mountains were a delight, and Shirley Gay filled our days with many interesting tour locations. We plan to repeat this trip, or at least organize a similar trip, in the future.

Our office is now equipped to take credit cards by phone, by mail or in person. We hope to be able to offer online credit card payments before too long. We are also working to make the service available to chapters for use at plant sales and other events.

Our longtime webmaster Sylvia Ori has stepped down from that position after many years of providing this special service to VNPS. Thank you so much Sylvia! The Executive Committee chose to present her with a gift certificate for the Potomack Chapter plant sale on your behalf.

Meanwhile, our website redesign is under

way, and our web expert Kevin Hipps is running the site temporarily. I've asked one or more people from each chapter to evaluate our changes and make suggestions. If you have an interest in this, or experience with websites, we can use your help. If I did not invite you and you are willing to help, let me know.

Soon a group of us will be leaving for the Bruce Peninsula. I just received a report of a sighting of a large group of blooming ram's head orchid, **Cypripedium arietinum**, and I think we have an exciting week in store.

Go out and see wildflowers!

Your President, Sally Anderson



Rare plants discovered and rediscovered in Virginia

The Virginia Department of Conservation and Recreation (DCR) announced in its recent newsletter about the newly documented presence of three plants by Natural Heritage botanists. Two of the plants owe their new celebrity to botanist Johnny Townsend. Recent exploration of lands along the Clinch River in Scott County, Virginia, by Townsend uncovered a population of *Symphyotrichum ontarionis*, otherwise known as Ontario aster or bottomland aster. This white-flowered species was previously unknown in Virginia but is distributed widely, being known from Quebec to Georgia and westward to Texas and the northern plains.

Despite this large range, Ontario aster is almost entirely absent from eastern seaboard states. This species is usually found in streamside or bottomland habitats and is often found in association

with limestone. There are several confusing species of white asters in the mountains of Virginia, making additional populations of Ontario aster a challenge to locate. Since suitable habitat seems abundant, it is not known whether Ontario aster is truly rare in the state or simply overlooked.

Harvey's beaksedge, *Rhynchospora harveyi*, has been rediscovered by Townsend, over 65 years after it was last seen in the state. This rare sedge was last collected by Harvard botanist M.L. Fernald in Sussex County in 1941. The species was rediscovered at Difficult Creek Natural Area Preserve in Halifax County, a Piedmont property known for its concentration of globally and regionally rare species of plants. Harvey's beaksedge is known from fire-maintained savannas of the coastal plain in the southeastern United States but is also known to inhabit glade-like habitats of the interior. Prescribed burns carried out

at Difficult Creek have no doubt benefited this species of open habitats.

In Botetourt County Natural Heritage Field Botanist Allen Belden located a new population of the rare shrub piratebush, *Buckleya distichophylla*, on Sheets Mountain. This globally rare species is found only in portions of the mountains of Virginia, North Carolina, and Tennessee. The habitat on Sheets Mountain is a narrow ridgecrest capped by sandstone.

The new population of piratebush consists of over 1,000 plants, making it one of the largest known concentrations of the plant in the world. It might be second only to DCR's Poor Mountain Natural Area Preserve in Roanoke County, Virginia. Piratebush is a hemiparasite and is known to utilize a variety of conifers as host species. At Sheets Mountain the host species is table mountain pine.

Flora Project update

Clayton descendants involved in plants and history

Imagine Chris Ludwig's surprise last June when he got an e-mail from John Clayton. This John Clayton is a descendant of the colonial Virginia botanist upon whose descriptions and collections was based *Flora Virginica*, published in the mid-1700s and the only flora the state has ever had. That ancient book will soon be supplanted by the *Flora of Virginia*, of which Ludwig is a co-author. Clayton, who lives in Los Angeles, wrote to introduce himself and offer his help to the Flora of Virginia Project, which Ludwig also directs.

Fast-forward to March, when Ludwig got a call from Richard and Leonie Smith, of Forest Grove, Ore., near Portland. Richard, too, is descended from John Clayton. The Smiths were coming to Virginia and wanted to drop by Flora Project headquarters, in the Division of Natural Heritage of the Virginia Department of Conservation and Recreation, in Richmond. The renown of the Flora Project had twice echoed back from the West Coast.

The Smiths and Clayton share a love of history and interest in Clayton genealogy, but the science and nature gene seems to have been transmitted undiluted to the present-day members of the line.

"We live and breathe the environment, if you will," said Richard Smith. In addition to their garden, which includes natives, he and Leonie raise hazelnuts and walnuts, as well as Douglass firs, but they have woods as

well, "covered with native plants," she said. They are "custom farmers": in addition to their own orchards, they farm lands owned by next-door neighbors, for a total of 400 acres. They use just a minimal amount of pesticides. "There's no point in eliminating all the bugs," Richard says. "There are a lot of beneficial ones," Leonie adds. They also use natural controls, such as pheromones for trapping the moth of the hazelnut worm.

On his property in the Hollywood Hills, John Clayton is a grower too, albeit on a smaller scale, gardening and raising citrus fruits, apples, seedless grapes, and pomegranates. But "I have a twin love," he says, "fauna, and I raise macaws." Clayton has succeeded where the Los Angeles zoo has failed, in getting endangered macaws to breed in captivity. "I like to think of that as the continuation of the Clayton tradition."

It's important to look toward the future, Leonie says, but it's also important to look back. She unfolded a family tree branching back to her husband's famous forebear. They had with them a copy of the 1963 biography by Edmund Berkeley and Dorothy Smith Berkeley, *John Clayton: Pioneer of American Botany*, a compendium of just about everything known on the botanist. And they have collected some family letters from the period of the American Revolution. Clayton lived from 1694 to 1773.



John Clayton, 1694-1773

The extant John Clayton managed to find a copy of *Flora Virginica* "almost by accident in L.A. in a rare-book show." His grandmother, Lilyan Putnam Clayton, pursued the family's genealogy and owed much of her success to the Clayton longevity. Lilyan, born around 1883, received the family's oral history through her husband's great-uncle, who was born in 1808 and died in 1916. "His father had been in the Revolutionary War, and his last son was in the first World War," Clayton said. It must have been like time travel: she was back to John Clayton's time in just two generations.

The Smiths left Richmond bound for the Clayton homeland, Gloucester and Mathews Counties and the Piankatank River and environs. They birded the Chesapeake Bay beaches in Mathews and visited friends they had met on their first visit to the area several years ago. On that trip, they dropped by an archaeological dig at Clayton's home site, which lay on a 250-acre tract the Claytons owned. John, too, visited that dig, in 2003. When the relatives get together for the first time, they'll have a lot of common ground with which to break the ice.

Bland Crowder
Pocahontas & John Clayton Chapters

The *Flora of Virginia*, expected in 2012, will be the first flora for the state since *Flora Virginica*. It will be a 1,400-page, illustrated manual of Virginia's 3,600 native and naturalized plant species, with the most modern taxonomic information available. To learn more about the Flora Project, or to make a donation or pledge, please visit our website at floraofvirginia.org.

Native plants have much to offer in landscape design

Native Plants: In Design was the focus of the 23rd annual Lahr Symposium at the U.S. National Arboretum in Washington, D.C. As the theme suggests, all speaker topics revolved around the idea of how and why to use native plants in the landscape.

The opening speaker was Claire Sawyers of the Scott Arboretum of Swarthmore College in Pennsylvania. Her Talk "The Authentic Garden: Five Principles for Cultivating a Sense of Place," highlighted topics she discusses in her book of the same title (Timber Press 2007). She began by exploring the influences of landscape design in America that range from English to Japanese gardens. The truly authentic American Garden Style, however, is deeply influenced by our natural surroundings. A sense of place is achieved when the landscape says you are in Virginia or you are in Colorado or California. Achieving sense of place is quite easy by keeping five principles in mind when planning the landscape: (1) Take note of the elements in natural areas surrounding you and work with what nature gives you. (2) Obtain beauty from the elements that serve a function in your landscape. (3) Use indigenous materials. (4) Join indoors and outdoors by blurring the line that exists between the two, and (5) Develop ways to engage visitors in the landscape by creating a physical "challenge" such as stepping over a log. This involvement makes the visitor slow down. It removes other distractions so that they are paying full attention to their surroundings.

The next presentation spoke of urban surroundings and the need to restore diversity to the urban forest. Richard T. Olsen, a Research Geneticist at the U.S. National Arboretum, began by saying "Urban Sprawl: Cut down all the trees and name the streets after them." Unfortunately, this is what we have done in urban areas – we have stripped the sense of place and diversity that once existed.

The 400-year-old idea of planting perfectly symmetrical trees along avenues in straight lines began in America with L'Enfant's vision of Washington, D.C. L'Enfant's inspiration was derived from French and Italian landscapes where avenues of trees were a sign of power. This old tradition destroys diversity and sense of place.

To move away from this view of the landscape, we need to create a market that gives the nursery industry incentive to "think outside the box" of perfectly symmetrical trees that are created via cloning. By cloning trees, we are losing the genetic diversity that occurs in nature. An example of this is red maple (*Acer rubrum*) where only the ones with red fall foliage are available and none of the ones with yellow fall foliage are being propagated. Another example is willow oak (*Quercus phellos*) that is currently grown from seed but nurseries are experimenting with cloning instead so they can achieve more uniformity.

Additionally, many trees are not available in the nursery trade. Nurseries need plants that are easy to propagate, easy to transplant and very adaptable. Many bottomland forest trees are easy to produce and adapt well to urban situations so there are many of these species in the trade. Xeric trees, on the other hand, present production problems and are not readily available in the nursery trade. Hickories, which are not available (except from some native plant growers), present an interesting challenge to the nursery industry because of their taproot. You are probably thinking oaks have a taproot too and they are available in nurseries. Evidently, nurserymen cut the root on an oak when it first grows out of the acorn. The oak will then produce a branching root system that facilitates nursery production. The hickory, on the other hand, will not form a branching root system. It will grow a taproot, and when cut will continue to grow taproots,

thus making it cost prohibitive for the nursery industry, which needs to have plants of a saleable size in two to three years. Ultimately, with the destruction of natural lands it will be up to the gardens of the 21st century and the nursery industry to decide what plant species will be here for future generations.

The third and final speaker of the day was Warren Byrd of Nelson Byrd Woltz Landscape Architects who spoke of gardens for the 21st century in "An Eye for the Natural and the Art of Design." His firm applies a sustainable approach to the landscape by incorporating site specific cultural and ecological characteristics. They emphasize regional native plants but will also use adapted non-native, non-invasive species. They recognize that water is an important resource so they minimize irrigation and impervious surfaces. Water is celebrated by incorporating rainwater collection sites that are often water gardens that provide habitat. Because all things are connected, Byrd's firm incorporates natural history into the landscape that attracts wildlife. Cultural history is another feature they always try to incorporate into a site. The firm's philosophy is simply knowing your region and knowing you are doing this to benefit all living things including people.

Along with these three presentations, there were three concurrent sessions to choose from and a native plant sale featuring nine nurseries. This symposium is held annually on the last Saturday of March and the organizers always do a wonderful job at choosing themes and accompanying speakers. I have attended the Lahr Symposium at the U.S. National Arboretum for quite a few years and always leave inspired by the new things I have learned.

Kim Strader, VNPS Horticulture Chair

Rain garden book speaks to southern landscapes

If you have ever wondered about how your garden and landscape affect the environment, specifically your water supplies, then pick up a copy of *Rain Gardening in the South: Ecologically Designed Gardens for Drought, Deluge, & Everything in Between* by North Carolina State University horticulturists Helen Kraus and Anne Spafford. The truth is that home gardens and landscapes contribute substantial amounts to water pollution—but they also can be part of the solution. Rain gardens to the rescue! These specially designed gardens capture rainfall flowing through your yard (known as runoff), store that water to nurture its plants, and cleanse runoff, thus removing the pollutants it carries with it. Sounds good, doesn't it? Ready for more good news? Rain gardens are fairly easy and inexpensive to create having a defined structure made up of only five basic components. Learn about the next great gardening practice that will define a landscape as being both beautiful and water-wise. Be the first house in your neighborhood to create one!

Rain gardens maximize rainwater, enhance the landscape, and promote good environmental stewardship. Runoff contributes significantly to polluting our waterways. The rain garden, which functions as a miniature reservoir and filtration system, offers an effective, visually pleasing solution that dramatically reduces toxic runoff, resulting in cleaner rivers, lakes, and oceans.

The authors define the rain garden as "a garden slightly sunken below grade designed to capture rainfall, store that water to nurture the garden plants, and cleanse runoff, thus removing pollution." Ironically, rain gardens are more drought-tolerant than conventional gardens. Because of their plant selection and ability to store water, rain gardens flourish during dry spells, as well as rainy seasons, making them particularly conducive to the South.

"Water-wise gardeners are conscious of both the need to limit their water use and the need to minimize runoff, thereby dramatically reducing water pollution," write Kraus and Spafford. "Not only are rain gardens extremely effective in addressing water and pollution issues, they are gorgeous."

Rain Gardening in the South addresses the specific environmental circumstances of southern gardens, such as climate issues, plant selection, and soil types. It details step-by-step instruction on constructing a garden, from the design stage to post-planting maintenance, including plant lists and troubleshooting tips.

Rain Gardening in the South is a user-friendly guide, offering a solid introduction to this important gardening movement, as well as an easy reference. Complete with design strategies, construction tips, plant selection guides, and even a troubleshooting section are included.

This book is a "must-have" on any environmentally responsible gardener's bookshelf. Published by Eno Publishers, a nonprofit regional publishing group, *Rain Gardening in the South* is a fun read, that specifically addresses problems that arise in southern gardens.

The book is illustrated, four-color, soft-cover, 144 pages, 7 1/2" x 9 1/4". Its retail price is \$19.95 (ISBN: 978-0-9820771-0-8). It is now available at local bookstores or you can visit Eno at www.enopublishers.org.

Goats tackle invasives



There's a new tool being used effectively across the country to control invasive species -- goats! In the Appalachian hill pastures of West Virginia goats have proven quite proficient at removing autumn olive, multi-flora rose, kudzu, brambles, thistles, English ivy, knotweed, privet, and other invasives. The animals are not bothered by thorns and because of their digestive process the seeds are so well digested that future growth of the plants is minimized.

Over the last decade the goat method has proven successful in such far-flung places as California, Washington state, Oregon, Nebraska, Arizona, North Carolina, Alabama and Maryland. In New Jersey, goats were used to help restore the wetland habitat of a rare bog turtle whose habitat had been compromised due to invasives such as common reed and Japanese stiltgrass.

'Exotic Workdays' in SNP

Help clear the Shenandoah National Park of invasive exotic plants. See which "Exotic Workday" works for you. All the removal days are Saturdays from 10 a.m. to 2 p.m.

June 13 - Big Meadow – Garlic Mustard; **June 27** - Hogwallow – Mile-a-minute; **July 18** - Hogwallow – Mile-a-minute; **Aug. 15** - Swift Run – Wavyleaf Basketgrass; and **Sept. 12** - Big Meadow – Garlic Mustard. **September 26** National Public Lands Day; the time for this workday will be announced later.

If you are interested in coming out to volunteer your time to help get rid of invasive/exotic plant species from Shenandoah National Park, contact biological technician Sara Hall (540-999-3500 x3437 or sara_hall@nps.gov) and she will give more details about what will occur. Tell your friends and family. Just wear old clothes that can stand some dirt and bring water and a lunch. The park will provide the tools and gloves.



Marjorie Prochaska studies a fire pink (*Silene virginica*).



Fraser's sedge (*Cymophyllus fraserianus*, formerly *Carex fraseri*) in bloom.

• Nature's extravaganza

(Continued from page 1)

Cymophyllus fraseriana, with its curiously showy flower, common in forests that have never been logged.

When the trail dipped down to a stream crossing, we invariably saw brook lettuce, *Saxifraga micranthidifolia*, in vigorous bloom, and we had one good sighting of umbrella leaf, *Diphylleia cymosa*. Then we stumbled upon a marvelous *Hexastylis arifolia* hiding dozens of little brown jugs under its leaves. Throughout the park nature conspired to give us the most glorious show of (what else?)

showy orchis, *Galearis spectabilis*, that any of us had ever seen. This tiny plant was in its prime, over and over again, reminding us of what beauty lies at our feet on the forest floor.

When we looked up, we saw the big trees and realized why biologist Ted Bradley called the southern Appalachians "the heart of the biome." The tulip poplars were twice the height of what I have seen in Virginia. We didn't know that yellow birch could grow so high or that red maple could become so gnarly. It was sad to see the dying hemlocks, giants still standing,

that will one day come crashing down, but high in the canopy we could see the Carolina silverbell, *Halesia carolina*, blooming. Carrie Blair measured the circumference of one and calculated a whopping 32 inches in diameter! One ought to plant this in the garden just to be able to see its charming blooms at close range.

I understand now why folks go back year after year. The Great Smokies quite capture you. Maybe we'll do this again next year. Stay tuned.

Marjorie Prochaska, Piedmont Chapter



Measuring the circumference of a large silverbell (*Halesia carolina*).



A rich slope with Solomon's plume (*Maianthemum racemosum*) and maidenhair fern (*Adiantum pedatum*).

Shenandoah uses many avenues to support native plants

To support the VNPS mission for education, advocacy and activities that promote appreciation, stewardship and appropriate use of native plants, members of the Shenandoah Chapter have been involved with several projects. Here is a summary of what they have done since the beginning of 2009.

- A presentation on biodiversity and how native plants are an integral part of an ecosystem was given in February to Augusta County Envirothon students. The students were learning about natural systems such as geology, soils, forestry and wildlife biology in order to design a site management plan for a Nature Conservancy area in southwestern Virginia. Envirothon is a national scholastic competition for high school students interested in the environment.

- The chapter was asked by Sandy Greene (Headwaters Soil and Water Conservation District) to contribute information and photos for a sign about native plants displayed at the Marl Creek Education Trail at McCormick's Farm. Photos illustrating native plants found at the site were provided along with a brief statement about each one. The sign

will hopefully be in place this fall.

- The chapter was contacted to support Blacks' Run Cleanup in Harrisonburg by helping work teams identify and remove invasive plants from three areas along Black's Run. The day did not go quite as planned as no work teams were allocated to the project. However, the interest is there, the need certainly is there and hopefully, next year will be more effective. Many people stopped at our information table.

- Earth Day in Staunton provided another opportunity for Shenandoah members to give out information and speak to people about native plants. The event was well attended and resulted in at least two new members! A slide show about native plants was presented to the Hill and Valley Garden Club of Luray. The program was very well received. They would like to see a more "native plants in the garden" oriented presentation at some future time.

- Invasive plants were removed from two locations: Deep Run Ponds Natural Heritage site in Rockingham County and Loft Mountain in Shenandoah National Park. At Deep Run Ponds, members started picking up

trash along the road in 2002 and pulling garlic mustard in 2005. Although the chapter no longer picks up the trash because the road was adopted by a local family, the annual garlic mustard removal is showing definite positive results in the two areas being concentrated on. The Loft Mountain project just started this April. There will be several more workdays scheduled this year for sensitive areas in the park including the wavy leaved basket grass site in Swift Run Gap.

- The George Washington National Forest Road Surveys for native and invasive plants continue through the efforts of a group of very dedicated botanists and data entry people. Since 2005, and sporadically before that, Forest Service roads have been monitored to identify and locate native species for protection from herbicide spraying. A coordinated effort is made to survey all the roads identified by the Forest Service as intended to be sprayed in their annual roadside maintenance program. Annual meetings with the Forest Service continue to help define and refine this project.

From the Shenandoah Chapter newsletter

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The deadline for the next issue is **June 25**

Natural Treasures Hunt appeal continues

Our 2009 Appeal letter went out this spring. Our goal is to raise money for a special project of the Natural Heritage Program. The funds will go toward searching for and documenting a group of plants that have incomplete records and have not been visited for many years. Thanks to those of you who have made contributions, and we hope the rest of you won't forget us. The more we raise, the more plants will be searched for in Virginia habitats across the state. Costs are estimated at \$500 per plant for a botanist to research a plant, find it, and document the work. The data will also help the Flora of Virginia Project, since the plants and information can be more accurately portrayed in the new book. Because we have switched to a spring appeal, we will spend this calendar year accumulating donations, but the project will be carried out by Heritage personnel in the 2010 growing season, when they will know what we can give them to work with.

Mark your calendar: VNPS Annual Meeting, Sept. 25-27

Come to Salem for the Annual Meeting

The VNPS annual meeting will be in the mountains this September 25 to 27 in Salem, Va. Watch in the next newsletter for all the meeting details as well as a registration form. If you like mountains and a great diversity of habitats you will love this year's get together. Our featured speakers are Peter Heus of "Enchanters Gardens" in West Virginia. Peter will speak on propagation. He will be followed by Professor Doug Tallamy. He will talk about his book *Bringing Nature Home*. Put the two together and you will be able to make your yard wildlife friendly with lots of native flora.

There are walks for the brave to wetlands, mountains, The Nature Conservancy and Virginia Natural Heritage Preserves as well as visits to the Jefferson National Forest and Blue Ridge Parkway. We plan to show folks the Alleghenies and the Blue Ridge.

We understand that there is money needed for the Flora of Virginia project. Here is your opportunity to do your part and have fun at the same time. The Blue Ridge and New River Chapters are planning a silent auction to help with the project. See you in September.

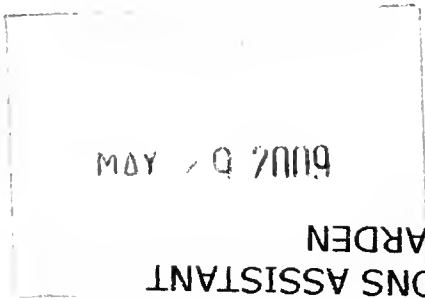
Butch Kelly, Blue Ridge Wildflower Society

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Bulletin

A publication of the VIRGINIA NATIVE PLANT SOCIETY
Conserving wild flowers and wild places

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Flora of the mountains, native landscaping featured at Annual Meeting in Salem

Meet the mountain flora and explore Southwest Virginia's unique habitats at the 2009 VNPS Annual Meeting co-hosted by the Blue Ridge Wildflower Society and New River Chapter at the Salem Civic Center from September 25-27.

Festivities will begin on Friday evening, September 25, with a social gathering and talented speaker Peter

Heus, owner of the Enchanter's Garden in Hinton, West Virginia. He will share his knowledge about how we can help nature by propagating native plants to use in our home landscapes. For instance, Heus collects seeds from his *Kalmia latifolia* and grows his own stock to sell. For a sneak preview of his expertise, visit www.enchantersgarden.com.

Saturday and Sunday will feature a variety of walks to many diverse areas. There will be walks focusing on butterflies and wildflowers, plant and insect relationships, and wetland areas -- yes, we do have wetlands in the mountains! Jeff Kirwan, one of the authors of the new book,

(See Annual Meeting, page 4)



The rare *Synandra hispidula* was locally abundant in the area of Southwest Virginia where we visited! (Photo by Emily Southgate)

SW Va. appreciated anew by VNPS visitor

When VNPS President Sally Anderson asked me if I would write a report on the VNPS trip to Southwestern Virginia, I hesitated. I enjoyed the beautiful scenery, amazing diversity of plants, fascinating geological formations and good company, but had taken no careful notes and only a few pictures. On searching the pictures, I found that I had been rather eccentric in my choice of subjects. I have numerous photos of the astounding display of *Synandra hispidula* which we saw in the rich cove forest along the Clinch River on the first day, and numerous ones of the not-so-rare but intriguing pipe vine, *Aristolochia macrophylla*, with its pipe-shaped flowers. What I especially took away from the trip, however, was a renewed appreciation of the importance of history: evolutionary, geological and human, for producing the exceptional vegetation and flora of this region.

(See Unique flora history, page 3)

INSIDE: Annual Meeting registration form inside

From the president

Spring brought interesting plants

Wow! Here I am in summer! Spring went by in a whirl and it has been glorious, hasn't it? Better to have rainy weather change a few plans than to have another dry year.

We finally had our outing to Crow's Nest on the solstice, after our May date was rained out. Even though it did not rain this time, we had a bit of interference - the wind made getting started in our canoes a little bit tricky. However, Hal Wiggins and Virginia Outdoor Center got us there, and we walked a bit of the woods on this approximately 3,000 acre tract that is Virginia's 54th Natural Area Preserve.



If you want more information on these preserves, look at the Virginia Department of Conservation and Recreation website for the Natural Heritage section. Virginia's preserves are set aside to protect natural resources, not as recreation areas, so some are open to visitation only with a guide. Some may be visited any time though, and are well worth the trip. Buffalo Mountain in Floyd County is a fairly easy trip from the Roanoke area. Some of us visited it after the Southwest Virginia trip, and found a botanically interesting hike up, and some uncommon plants and spectacular views on the bald.

On our recent VNPS trip to Ontario's Bruce Peninsula, I met a couple of supporters of the Foundation of Ontario Naturalists (FON). This group has been very active in preserving land in the province, including purchase of special habitats such as fens, alvars, bogs and woods. At one time they also routed the Bruce trail, including negotiating sections of the route with private landowners. The trail follows a geological feature called the Niagara escarpment. The escarpment is a UNESCO Biosphere Reserve, which means an effort is being made to mesh preservation with appropriate development. Kudos to FON for their work on behalf of these special habitats. It certainly helps make the Bruce a special destination, just as our Natural Area Preserves make Virginia a special place.

Your President, Sally Anderson

Take a virtual visit to Virginia's Natural Area Preserves

http://www.dcr.virginia.gov/natural_heritage/natural_area_preserves/index.shtml

The Virginia Natural Area Preserves System was established in the late 1980s to protect some of the most significant natural areas in the commonwealth. A site becomes a component of the preserve system once it is dedicated as a natural area preserve by the Director of the Department of Conservation and Recreation. Natural area dedication works in much the same way as a conservation easement by placing legally binding restrictions on future activities on a property. The Natural Area Preserve System includes examples of some of the rarest natural communities and rare species habitats in Virginia. This system now includes

57 dedicated natural areas totaling 46,409 acres.

Most of the preserves are owned by the Department of Conservation and Recreation, but some are lands owned by local governments, universities, private citizens and The Nature Conservancy (a private conservation organization). Each natural area preserve is managed primarily for the benefit of the rare plants, animals and natural communities found there. Some preserves feature low-intensity public access facilities such as trails and parking. These are open year-round during daylight hours but may be subject to temporary closure to protect sensitive spe-

cies or during some management activities, such as prescribed burning. Access to other preserves is restricted but generally may be arranged by contacting the site owner or manager. For information about each preserve, visit the website above and click on the individual name or map number.

An example of the website information can be seen in this listing for Crow's Nest:

The protection of Crow's Nest has been one of Virginia's highest land conservation priorities for many years. On April 18, the Virginia Department of Conservation and Recreation (DCR) (See Natural Area Preserves, page 8)

• Unique flora history

(Continued from page 1)

Two of our guides, Claiborne Woodall, an ecologist with the Virginia DCR Natural Area Preserves Program, and Anna Hess, an independent plant ecologist, gave us excellent summaries of the geological and human history that has shaped the landscape and flora of the region. Sixty million or so years ago, when the climate was warm, temperate zone plants were able to migrate between North America and East Asia via the Bering land bridge. A tremendously diverse flora of broad-leaved deciduous plants, called the Arcto-Tertiary Flora, occupied the whole area, (this was the beginning of the Tertiary Geological Era). As the continents drifted apart, the climate cooled and became dry in the west, but the A-T Flora survived in East Asia and eastern North America. As glaciers came and went over the last million or so years, they eliminated many of the species from northeastern North America, isolating this rich pocket of vegetation in the southern Appalachians, which had escaped the glaciations. This forest, called "cove hardwoods" or "mixed mesophytic" forest, is one of the most diverse regions in the world.

Although the forests have attracted loggers in the last couple of centuries, their rocky soils, steep terrain and remoteness saved much of the land from continued intense land use. The forests were able to recover from logging with much of their flora intact, including the very rich understory of shrubs and herbaceous plants. The limestone bedrock also has contributed to the rich flora of the region.

This history accounts for plants that are found only in East Asia and eastern North America. Two of the genera that we saw well represented on this trip, for example, Magnolia and Trillium, are found only in eastern North America (to Venezuela for Magnolia) and East Asia. In fact, the whole Magnolia family is native only to these two regions. Others that we saw include mayapple (*Podophyllum peltatum*) and sassafras (*Sassafras albidum*). A land bridge between North America and Europe, ac-



The aptly named Dutchman's pipe-vine (*Aristolochia macrophylla*).

(Photo by Emily Southgate)

counts for the large numbers of genera we share with Europe, like *Fagus*, *Acer* and *Quercus*. Even if we travel far afield we will encounter plants that we recognize because of this evolutionary and geological history!

To get back to southwestern Virginia, we visited a large variety of sites, from limestone cliffs to deep rich soils, from fairly low elevation with sugar maple forest to high elevation spruce-fir. Species lists for three days (provided by Ernest Wilson for Pinnacles and Natural Tunnel and Anna Hess for Sugar Hill) give an indication of the diversity: The Pinnacles list is 70 species, Natural Tunnel 168 and Sugar Hill 150. Our guides had trouble getting us out of the parking lots. Anna noted that it took us two hours to walk a 20-minute trail--not surprising given the number of species to be seen. It was even difficult to drive at a normal speed, as we tried to figure out which species of magnolias we were seeing and to identify other plants along the roadside. From the forest canopy to the smallest herbs, we reveled in the beauty of the plants. Three species of magnolia trees -- umbrella tree (*Magnolia tripetala*), cucumber tree (*M. acuminata*) and Fraser magnolia (*M. fraseri*) -- contributed color to the canopy. Blooming shrubs included wild hydrangea (*Hydrangea arborescens*) and elderberry (*Sambucus canadensis*). It would be hard

to select which small herbs to mention because there were so many. I especially enjoyed the yellow pimpernel (*Taenidia integerrima*), fringed phacelia (*Phacelia fimbriata*) and painted trillium (*Trillium undulatum*).

In addition to the overwhelming diversity of species, there were several globally and/or state threatened or endangered plants. At Pinnacle Natural Area Preserve we saw the globally endangered glade spurge (*Euphorbia purpurea*). The outstanding display of *Synandra hispidula*, a monospecific genus in the mint family, brought to life the description of a rare species as being "locally abundant" by covering a wooded hillside above the Clinch River. With some effort, we found the delicate mountain lover (*Paxistima canbyi*) along the trail at Natural Tunnel State Park.

Another indicator of the diversity of both habitats and species within the region was the large number of fern species, especially those that prefer limestone, such as the intriguing walking fern (*Asplenium rhizophyllum*) and wall rue (*A. ruta-muraria*). I especially like the specific epithet for the walking fern "rhizophyllum" or root leaf, which describes so well how this fern "walks" by rooting at the ends of its very long, attenuated fronds. The other *Asplenium* on our list, ebony spleenwort (*A. platyneuron*) is the only North (See SW Virginia, page 5)

Hard to decide which fieldtrip to choose?

Read here for more details



Trip 1 Falls Ridge Preserve - Part of a steep, rugged ridge that rises from the valley of the North Fork of the Roanoke River, Falls Ridge Preserve boasts a spring-fed travertine waterfall approximately 80 feet in height. Salem Fault runs through the preserve, dividing it into two different rock types-Pre-cambrian limestone and shale/sandstone. The corresponding difference in soil types generates a diversity of vegetation, particularly wildflowers and smaller flora.

Trip 2 Woodpecker Ridge Nature Center - The Woodpecker Ridge Nature Center in Botetourt County offers birders and nature enthusiasts numerous opportunities for wildlife watching. Features of interest to most visitors include a hawk watch platform, feeding stations for songbirds and hummingbirds, and butterfly gardens. Trails meander from butterfly gardens through hardwood forests, spruce and cedar stands, open fields, and pond habitats.

Trip 3 Fenwick Mines - The Fenwick Wetlands Trail, or the Beaver Dam Trail, is not like anything else you'll find in this part of the state. In fact, if you mentally block out the mountain ridges in the distance, it's easy to convince yourself of being in Florida or Louisiana instead of western Virginia. The trail heads left out of the roadside parking/picnic area at Fenwick Mines Recreation (there used to be several copper and iron mines in this area) and wanders through several marshy areas and into a small forest. It crosses "black water" on boardwalks, with a few piers to the side to stop and take in the unusual sights and sounds of an Appalachian swamp. One set of boardwalks and piers loops a pond. A set of short inclined ramps lead to an overlook point by a large rock, where you can get a good look over the whole scene. It's the ears that

may be in for the biggest treat here, especially in the warmer months. A symphony of frogs fills the mountain air with croaking song. Birds and crickets sing backup, and a few really big toads toss in a deep bass now and then.

Trip 4 Virginia Western Community College Arboretum - The Community Arboretum is a two-acre educational garden located on the campus of Virginia Western Community College in Roanoke, Virginia. Ten separate gardens and plant collections surround a centrally located amphitheater and are home to approximately 700 labeled plant taxa. The gardens are: conifer, perennial rainbow, rock, shade, children, herb, sensory, annual, wildflower, and groundcover.

Trip 5 Bent Mt./Bottom Creek Gorge - Forming the headwaters of the

Roanoke River, Bottom Creek Gorge boasts spectacular scenery: the second highest waterfall in Virginia, virgin hemlocks and hundreds of wildflowers. Bottom Creek is a powerful mountain stream that forms a stair-step series of broad-basin waterfalls known as the "kettles." One of the headwater streams of the South Fork of the Roanoke River, Bottom Creek boasts a 200-foot high waterfall. Flanking Bottom Creek are forests of mixed hardwoods (tulip poplar, maple, oak, hickory) and upland meadows. Five rare species thrive in this habitat.

(See Field trips page 5)

• Annual Meeting

(Continued from page 1)

Remarkable Trees of Virginia, will lead a trip to see several trees featured in the book, and we have visits lined up to Nature Conservancy Reserves and Natural Heritage areas that feature rare plants and special geologic features. There will be walks to the Virginia Western Community College Arboretum and the Blue Ridge Parkway will be featured on one field trip. One outing will take a look at roadside ditches and a new area in the Jefferson National Forest.

On Saturday evening bring extra cash and plan to participate in the silent auction to raise money for the Flora of Virginia Project. The auction will be followed by a banquet and annual meeting. The evening will culminate with our featured speaker, Professor Doug Tallamy from the University of Delaware. Doug is the author of the book, *Bringing Nature Home*. Tallamy brings a ground-breaking perspective to the interaction of man and the natural world. He helps us understand, for instance, how not killing the aphids on our plants, leaves them to feed birds and welcomes other pollinators, an important step in propagation.

There is a block of 40 rooms with queen or two double beds reserved at the LaQuinta Inn in Salem. We look forward to seeing many familiar and some new faces at this year's annual meeting.

Butch Kelly, Blue Ridge Wildflower Society

Virginia Native Plant Society 2009 Annual Meeting

September 25-27, Salem, VA

“Explore the Blue Ridge and Allegheny Mountain Flora & Discover How to bring Native Plants into Your Yard”

The 2009 VNPS Annual Meeting will focus on the late summer and early autumn flora of the Blue Ridge and Allegheny Mountains in Southwest Virginia. The Blue Ridge Wildflower Society and New River Chapters will host the event at the Salem Civic Center in Salem. This area is rich in geologic and plant diversity and field trips feature the Blue Ridge Parkway, Jefferson National Forest and several Nature Conservancy Preserves to see wetlands, meadows, waterfalls and forested areas. Friday evening starts with a reception and is followed by a slide presentation by Peter Heus on native plant propagation for our home landscapes. Saturday features a variety of field trips, a silent auction for the “Flora of Virginia” project, and then culminates with the annual meeting, a buffet dinner and our keynote speaker, Dr. Douglas Tallamy, author of Bringing Nature Home. Please come and enjoy a weekend meeting new and old friends and witnessing some outdoor splendor.

Accommodations: There is a block of 40 rooms being held until Tuesday, August 25 at the La Quinta Inn 140 Sheraton Drive Salem, VA 24153: \$89 + tax. Call (540) 562-2717 and mention the VNPS Annual Meeting. The La Quinta e-mail is lq6269gm@laquinta.com. All rooms include a full breakfast, pool, microwave, refrigerator and laundry. Other local hotels include the Hampton Inn 540-776-0743 and Comfort Suites 540-375 4800. *** Note: There is a VA Tech football game in Blacksburg on 9/26 so make your reservations early.

Directions to the La Quinta Inn: Traveling on I-81 take exit 141 to Rt. 419 south and turn right onto Sheraton Drive next to the Burger King.

Directions to the Salem Civic Center: Traveling I-81 take exit 141 to Rt. 419 south. Follow Rt. 419 to Roanoke Boulevard. It is about 3.5 miles to Roanoke Boulevard. (There is a Hess Station on the left). Turn right onto Roanoke Boulevard. Drive about 1/2 mile. The Salem Civic Center is at 1001 Roanoke Boulevard on the right. Enter the civic center through the door on the extreme left end of the building.

Friday schedule

Registration & Friday evening events at the Salem Civic Center:

3-7 p.m. Registration (credit cards accepted)

7-8 p.m. Reception and social hour

8-9 p.m. **Friday Evening Program: "Native Plant Propagation Techniques"** by Peter Heus of Enchanter's Garden in Hinton, WV. Peter is a native of Nissequoque, NY who moved to a farm in Summers County, WV in 1974. Here he developed a strong interest in the diverse flora of the region and that developed into a native plant nursery called Enchanter's Garden located near Hinton, WV. He spends most of his time running the nursery, attending conferences and other events that promote the use of native plants and exploring native species that deserve wider use in horticulture.

Program Description: A Ph.D. in horticulture is not necessary to grow most native wildflowers, trees, shrubs, grasses etc. utilizing common and homemade equipment. Peter will show how you can grow many of the plants you covet for your home landscape by seed, cuttings and division. He will also talk about sources of propagative material.



Saturday Field Trips

Registration for the field trips will begin at 8 a.m. Morning/full day trips will begin at 8:30 a.m. from parking lot at the north end of the Salem Civic Center. The civic center is at 1001 Boulevard, Salem. Turn left at the front door of the civic center. The staging area is located by the side door. Lunches will be handed out at this time for all day field trips.

Morning Half Day (Depart 8:30 a.m., return noon)

1. Falls Ridge, The Nature Conservancy Preserve. Limit 20 Easy 1.5 miles. Falls Ridge is a very special place for endangered plants such as Addison's leather flower, Allegheny plum and golden-seal. This area covers over 600 acres of upland forest featuring a travertine waterfall. This walk will feature plant and insect interactions. Autumn features a wide variety of insects laying eggs and preparing for the winter. Join Professor Roger Sheppard for a curious look at plants and insects up close and personal. Roger is Professor of Biology Emeritus at Concord University in West Virginia. He is presently teaching several classes at Virginia Tech and Radford University.
2. Woodpecker Ridge. Limit 20 Easy, 1-2 miles. Woodpecker Ridge is a private preserve with a very diverse offering of habitats and activities. It is on the Virginia Birding and Wildlife Trail. Many species of flora and fauna can be found in the hardwood stands, butterfly garden, meadows, ponds and cedar stands. Join Mike Donahue for a close up look at butterflies, wildflowers and insects. Mike is a well known local naturalist and birder. His real love is butterflies. He is a technician for Jefferson National Forest. You won't be disappointed.

***Registration for afternoon only field trips will begin at Noon at the staging area in the parking lot of the civic center.

Afternoon Half Day (Depart 1 p.m., return 4:30 p.m.)

3. Fenwick Mines. Limit 20 Easy 1-2 miles. Fenwick Mines is a relatively new area developed in the Jefferson National Forest. There is a handicapped accessible boardwalk and several trails. The area offers good wetland habitats as well as a mixture of open and forested habitat. Join Bill Hunley for an outdoor experience. Bill is a local science teacher and adjunct professor of environmental science at Mary Baldwin College.
4. Virginia Western Community College Arboretum. Limit 15 Easy. The arboretum is a 2-acre education garden consisting of 10 separate gardens. Included are the conifer, rock, children's, herb, and sensory gardens. There is also a wildflower garden. Join Rich Crites on a leisurely stroll through one of the Roanoke Valley treasures. Rich is a retired biology professor at the college. He is also president of the Blue Ridge Chapter and has a wide knowledge of local flora.

Saturday All Day Field Trips (Depart 8:30 a.m., return 4:30 p.m.)

5. Bent Mt.-Bottom Creek Gorge Nature Conservancy Preserve. Limit 20 Moderate, 4 miles. This trip will include a wetland area with lots of lobelia, sedges etc. The gorge area is a protected area that has a mixture of habitats: old fields, mountain streams, hemlock forests, and mixed hardwood forest. The Nature Conservancy has preserved these 1,657 acres for the 200 foot waterfall (second highest in Va.) and spectacular scenery. The area features a large stand of Carolina hemlock, the rare chestnut lip fern and several rare fish species. This a stunning place to visit. Join Jim Bush, Master Gardener and resident of the Bent Mountain area, on this trip.
6. Blue Ridge Parkway South. Limit 20 Little walking. This will be an auto tour of the Blue Ridge Parkway from Milepost 121 to 180 and back featuring spectacular views and a mixture of forest and meadows. Many of the bays along the road host asters and goldenrods. There will be short walks from the vehicles to view the many sites of one of Virginia's most visited natural areas. Smart View and Rocky Knob areas will be highlighted as well as the parkway's history. Join Butch Kelly for a trip down one of the National Park Service's treasures. Butch spent 13 seasons as a parkway natural history interpreter.
7. Pandapas Pond-Poverty Creek. Limit 20 Easy walking, about 2 miles. This area, in the Jefferson National Forest near Blacksburg, is the site of an old hard scrabble farm, thus the name Poverty Creek. It offers lots of biking, horse, and hiking trails as well as a large pond featuring a variety of plants and fishing. Several volunteer groups have helped establish a butterfly garden that includes 95 percent native plants. Co-leaders Vicky Barden and Ruth Douglas will provide an interesting trip through forest, field and wetlands. Vicky is a member of the New River Chapter and a long time wildflower enthusiast. Ruth is a Member at Large on the VNPS board and retired biology professor from Northern Virginia Community College.

8. Heritage-Gateway Parks. Limit 20 Easy walking. Approximately 1-2 miles. This area is an old farm with old fields and an array of fall flora including lots of composites. It is rich in a variety of asters and goldenrods. This rolling area is a beautiful treasure within the town of Blacksburg. David Darnell will lead this trip. David has a botany degree from San Diego State. He has vast experience working in environmental protection throughout the U.S. He did wetland work in Gateway Park in San Francisco, CA. Be ready to learn a lot.

9. Peaks of Otter. Limit 20 Moderate to easy walking. Approximately 3 miles. This trip is scenic, with superb views of the Great Valley and Goose Creek Valley. The trip will include a 2-mile round trip walk to the Johnson Farm. It features the site of an old still and a farm, built in the 1850s and restored to the 1920s. There are deep woods of oak, poplar and hickory as well as meadows and old fields. If time permits a 1-mile walk around Abbott Lake will be included. The trail is below a looming Sharp Top Mountain and circles the lake. It offers some wetland plants. Look for lobelia and cattail to name just a few plants. Rudy Albert will lead this trip along with a National Park Service Ranger.

Sunday Field Trips (Depart 9:30 a.m.)

10. Poor Mountain Natural Heritage Preserve. Limit 20 Easy, 1-2 miles. This preserve is located in a rugged mountain region close to Salem/Roanoke. This newly completed trail features easy walking. Expect to see pirate bush (*Buckleya*). Although the area earns its name due to its infertility, it is vegetated with pine-oak forests underlain with lots of heath plants. Besides huckleberry, mountain laurel, and fetterbush look for lots of oaks and table mountain pine. Join Bryan Wender, Natural Heritage steward, who knows the area like the back of his hand and has worked for the NPS at Big South Fork in Tenn.

11. Remarkable Trees of Virginia. Limit 15 Little walking. If you have seen the book *Remarkable Trees of Virginia* and its wonderful photos, this is your chance to see some of the trees up close and personal. Featured will be two huge and remarkable honey locusts and an absolutely fabulous American elm. Jeff Kirwan, one of the co-authors of the book will lead you on this unique field trip. Jeff is a professor of forestry at Virginia Tech. His vast knowledge of trees and love of his field will provide one and all a delightful morning.

12. Virginia Western Community College Arboretum – Trip leader Cindy Burks is the former president of the Blue Ridge Wildflower Society. She is a veteran walk leader and knows the flora of the area well. *See description number 4.*

Saturday Schedule

8 a.m.-4:30 p.m. Field Trips

5 p.m.-6:30 p.m. Social hour and cash bar

7 p.m.- Silent Auction for the "Flora of Virginia Project"

6:30 p.m.-7:30 p.m. Buffet dinner

7:30 p.m.-8:30 p.m. Annual business meeting & announcement of silent auction winners

8:30 p.m.-Featured Program

"Bringing Nature Home" by Doug Tallamy

Doug is a professor and chair of the Department of Entomology and Wildlife Ecology at the University of Delaware. He has written more than 65 research articles. Among the classes he has taught are insect taxonomy and behavioral ecology. He is the author of the book *Bringing Nature Home: How Native Plants Sustain Wildlife in Our Gardens*. Doug will share with us how native plants and native wildlife interact and how exotic plants interfere with the natural scheme of things. He will provide practical recommendations for us to enhance our gardens for native wildlife through the use of native plants.

Registration Form

*“Explore the Blue Ridge and Allegheny Mountain Flora
& Discover How to bring Native Plants into Your Yard”*

Virginia Native Plant Society 2009 Annual Meeting
September 25-27, Salem, VA

Registration Fee: \$75 for VNPS participants. Registration opens August 1, 2009.
(Credit cards accepted) \$105 for non-VNPS members. Registration opens August 15, 2009.
Banquet and speaker only fee for VNPS members is \$25.
Banquet and speaker only fee for non-VNPS members & non-participating companions is \$30.

Note: Full registration includes all field trips, Friday and Saturday speakers, box lunch for Saturday and the Saturday banquet. (Vegetarian choices at all meals!)

Name _____ Phone Number _____

Second person in your party _____

Street _____ City, State, Zip _____

Email _____

Signature ** _____ (required)

****Signatures required on all registrations.** By signing this form the above registrant shall hold harmless the Virginia Native Plant Society, including its staff and volunteers and those designated to serve as their provider.

Registration closes on Sept. 15 Please register early, as space is limited

Number attending: _____ VNPS Members _____ General Public
_____ Banquet/speaker only for non-participants
_____ Total

Registration fees _____ \$75 VNPS members beginning August 1 (includes everything)
_____ \$105 General Public beginning August 15 (includes everything)
_____ \$25 banquet/speaker only fee VNPS members
_____ \$30 banquet/speaker only fee for non-participants & companions

Please note: All field trips are limited as to number of participants. Please see each walk for details. You may do a Saturday a.m. walk and a p.m. walk. If your party has more than one person put the number of people under each choice.

Saturday a.m. Field Trips: _____ **Saturday p.m. Field Trips:** _____

1st choice _____ 1st choice _____
2nd choice _____ 2nd choice _____

*For more information
Contact VNPS office manager Karen York at
540-837-1600 or vnpsoc@shentel.net*

Saturday All Day Field Trips: _____ **Sunday Field Trips:** _____

1st choice _____ 1st choice _____
2nd choice _____ 2nd choice _____

Saturday box lunches: Choose one: Ham/cheese _____ Turkey/swiss _____ Veggie Pita _____.

Want to pay by credit card? Circle one Discover, Mastercard, Visa
Card number _____ Exp. date _____ Security Code _____
Printed name _____
Signature _____

**Mail this form (with check payable to VNPS or credit card information) to:
VNPS Annual Meeting, 400 Blandy Farm Lane, Unit 2, Boyce, VA 22620**

● *Field Trips*

(Continued from page 4)

Within the boundaries of the preserve is a half-acre of hardscrabble terrain (a shale barren) that provides habitat for the globally rare chestnut lipfern. Formerly known only from north central Mexico to the southwestern United States, this chestnut lipfern population is isolated in southwestern Virginia and eastern West Virginia. Rising from the north side of the creek is an old-growth hemlock forest that boasts the state's largest Carolina hemlock. Due to their inaccessibility, the hemlocks are largely untouched and are spectacular in size and age. A mix of forest and fields cover the rest of the preserve. Mixed hardwood stands of tulip poplar, maple, oak, and hickory are complemented by several meadows and dense rhododendron thickets in the ravines.

Trip 6 Blue Ridge Parkway - Outstanding scenery and recreational opportunities make the Blue Ridge Parkway one of the most popular places to visit within the National Park System. "America's Favorite Drive" winds its way 469 miles through mountain meadows and past seemingly endless vistas. Smart View, one of the places the group will visit, has an elevation of 2,503 feet and offers excellent views of the Virginia Piedmont. Various trails here meander through moist deciduous woodlands, hardwood forests, and open fields.

Trip 7 Pandapas Pond - Pandapas Pond is a scenic and popular place to hike, picnic and enjoy nature. And it's located only four miles from Blacksburg. The pond itself is a man-made, eight-acre body of water. It sits on the edge of the eastern continental divide and is the headwaters of Poverty Creek. Pandapas is a great place to visit in any season. In the summer, the pond provides warm-water fishing (bass and blue gill) and canoeing opportunities. An easy, graveled one-mile trail encircles the pond and makes

for great family hiking. Birders, wildlife watchers and wildflower hunters enjoy wandering through a variety of ecosystems including wetlands and forests of pine, hardwoods and rhododendrons.

Trip 8 Heritage Community Park and Natural Area and Gateway Park

- These two parks are part of the extensive system of small parks and greenways in the town of Blacksburg. A feature of Heritage Community Park is the 24-foot long wooden bridge that straddles Toms Creek and connects the two ends of the 169-acre park. It also slips into place one more link of the popular Huckleberry Trail that runs from New River Valley Mall in Christiansburg to the heart of Blacksburg

Trip 9 Peaks of Otter - The Johnson Farm and Polly Wood's Ordinary represent two historic periods at the Peaks. Polly Wood's cabin served as the first lodging for travelers through the area starting in the early 1830s. The Johnson Farm sheltered three generations of the Johnson family, and today it is a living history farm where you can play games, help work the garden, or just sit on the porch and relax in a rocking chair.

The Peaks of Otter feature rich mesic slopes characteristic of the eastern Blue Ridge and contrast sharply with the western Blue Ridge and much of the Valley and Ridge province where, other than the limestone

The Kaines tackle invasives

Virginia Governor Timothy M. Kaine recently applauded the launch of the United We Serve initiative, a national effort by the Obama administration to promote and sustain community involvement. To kick off the initiative in Virginia, First Lady Anne Holton and Deputy Secretary of Natural Resources Nikki Rovner joined U.S. Secretary of the Interior Ken Salazar at the Big Meadows area of Shenandoah National Park to perform invasive weed removal. Governor Kaine will participate in a number of programs throughout the summer as part of the initiative.

and shale valleys, sandstone and quartzite ridges prevail. Northern species such as yellow birch and Canada mayflower have been observed at higher elevations, while wide-ranging more southern species are seen at lower elevations.

Trip 10 Poor Mountain Natural Heritage Preserve

- In autumn, the forest slopes and ridgetops of Poor Mountain are brightened by the brilliant yellow foliage of piratebush. Poor Mountain Natural Area Preserve protects the world's largest population of this globally rare shrub, which is restricted to only a handful of sites in the mountains of Virginia, Tennessee, and North Carolina. The mountain is named for its impoverished soils derived from metamorphosed sandstone bedrock. The ridgetop, 3,000 feet in elevation, is predominantly a xeric table mountain pine and oak woodland. Piratebush is a dominant understory shrub in this community along with huckleberry and blueberry. Piratebush is also found with mountain laurel in the hemlock ravines and mesic pine forests of the lower elevations.

Trip 11 Remarkable Trees of Virginia Walk

- Join one of the authors who wrote the book on the state's remarkable trees as you visit some of the featured subjects seen in the book's pages. Included will be stops at an American elm located on the grounds of a local country club and two huge honey locusts in a Fincastle cemetery.

● *SW Virginia*

(Continued from page 3)

American fern that is also found only in southern Africa. It is also interesting in that its range is currently expanding north, perhaps in response to global climate change.

This is just a brief idiosyncratic sampling of the plants we saw on this excellent field trip. I would encourage anyone who has not been there to go the next time it is scheduled. It was a memorable trip, that I hope to repeat in future years.

*Dr. Emily Southgate
VNPS Piedmont Chapter*

NWF touts top 10 native plants for region

As part of their Certified Wildlife Habitat program, the National Wildlife Federation has published a list on their website (www.nwf.org/backyard/northeast.cfm) of the Top Ten Native Plants in the Northeast. Is your favorite native on the list?

Eastern Red Cedar (*Juniperus virginiana*)

The eastern red cedar is an aromatic evergreen tree. It can grow to heights of 40-60 feet. Evergreen leaves are dark green and scale-like. The dark blue berries are soft, juicy and sweet. Did you know? The most widely distributed eastern conifer, native in 37 states, eastern red cedar is resistant to extreme drought, heat, and cold. The aromatic wood is used for fence posts, cedar chests, cabinetwork and carvings. First observed at Roanoke Island, Virginia, in 1564, it was prized by the colonists for building furniture, rail fences, and log cabins. Cedar oil for medicine and perfumes is obtained from the wood and leaves. The juicy "berries" are consumed by many kinds of wildlife, including the cedar waxwing, named for this tree. Red cedar can be injurious to apple orchards because it is an alternate host for cedar-apple rust, a fungus disease.

Black Tupelo (*Nyssa sylvatica*)

The black tupelo is also known as the blackgum or sour gum tree. This tree has a dense, conical or sometimes flat-topped crown and many slender, nearly horizontal branches. The glossy foliage turns scarlet in the fall. The black tupelo bears fruit with sour pulp. Did you know? A handsome ornamental and shade tree, Black Tupelo is also a honey plant. The juicy fruit is consumed by many birds and mammals.

Northern Red Oak (*Quercus rubra*)

The northern red oak is a large tree with a rounded crown of stout, spreading branches. This tree can grow to heights of 60-90 feet. Red oaks bear acorns which can be toxic to animals if eaten. Did you know? The northern-



Eastern Red Cedar
(*Juniperus virginiana*)

most eastern oak, it is also the most important lumber species of red oak. Most are used for flooring, furniture, millwork, railroad cross-ties, mine timbers, fence posts, pilings, and pulpwood. A popular shade and street tree with good form and dense foliage, the red oak is one of the most rapid-growing oaks and is hardy in city conditions.

Winterberry (*Ilex verticillata*)

Also known as the Michigan holly and black alder, the winterberry is a deciduous holly shrub with very small white flowers that grow in the leaf axils. The fruit is red and berry-like and grows on short stalks. Did you know? Extremely showy in late fall and early winter when covered with their bright red fruit, these shrubs are either male or female—a trait typical of the holly family. Birds are readily attracted to them. This shrub grows well in both wet and dry sites.

Sweet Pepperbush (*Clethra alnifolia*)

The sweet pepperbush is a tall, many-branched, leafy shrub with spike-like, upright clusters of fragrant white flowers that flower from July to September. Did you know? Its dry fruit capsules remain long after flowering and help identify this plant in winter. Mountain pepperbush (*C. acuminata*) has more pointed leaves and is found in southern mountains.

Red Chokeberry (*Photinia pyrifolia*)

Red chokeberry is a spreading shrub with terminal clusters of white or pink-tinged flowers on hairy stalks. The shrub is found in thickets, clearings, low woods and swamps. Did you know? A native shrub, this species forms sizable colonies and is excellent for naturalistic landscaping. Although chokeberry fruits persist through much of the winter, they appear to be of little importance to wildlife; they are occasionally eaten by game birds and songbirds and reportedly by bears.

Blue Vervain (*Verbena hastata*)

Blue vervain is also known as Simpler's-joy or blue verbena. It has stiff, pencil-like spikes of numerous small, tubular, blue-violet flowers at the top of a square, grooved stem. Did you know? Bumblebees are among the important pollinators. In ancient times the plant was thought to be a cure-all among medicinal plants and the genus name is Latin for "sacred plant."

Rough-stemmed Goldenrod (*Solidago rugosa*)

Rough-stemmed goldenrod is a tall, rough, hairy plant with small, light yellow flower heads concentrated on the upper side. It is also known as wrinkle-leaf goldenrod or rough-leaf goldenrod. Goldenrod is often found in fields and along roadsides and border of woods. Did you know? This highly variable goldenrod can form large

(See *Top plants*, page 8)

Statewide invasive plant removal day a success

The first statewide Invasive Plant Removal Day (IPRD) was initiated by Meghan Fellows, of the Fairfax County Park Authority, who had run several successful local IPRD's in Fairfax. She contacted VNPS and Master Naturalists hoping to move a successful local program in to a state-wide program, and also worked with Jenn Truong, Invasive Species Control Program Coordinator for Arlington County. Much work was done to get a website up and running and spread the word to appropriate local organizations around the state.

Michelle reported that a search on the net came up with 450 different blogs, websites, and electronic newsletters that promoted the day. The web site for IPRD showed 41 different invasive plant removal sites, mainly in Northern Virginia, but also including sites in Richmond, Northern Neck, Hampton Roads, and Charlottesville. More than 400 volunteers, including Master Naturalists, scouting and other youth groups, neighborhood associations, Tree Stewards, and other com-

munity groups worked together to remove invasive plants. More than 1,300 hours of service yielded 250 bags of invasive plants.

Volunteers learned more about invasive plants and how to remove them, and the impact they have on our natural ecosystems. And, they also learned more about native plants and animals while they worked

(The material in this report was taken from a report prepared by Michelle Prysby, Virginia Master Naturalist Program Coordinator.)

Potential land transfer threatens Fort Dupont Park

VNPS has joined the Maryland Native Plant Society (MNPS) and David Culp, a concerned individual, in filing a complaint that challenges the National Park Service's (NPS) proposed transfer of 15 acres of Fort Dupont Park to the District of Columbia. Fort Dupont is one of the forts that are collectively known as the Civil War defenses of Washington, or the "Fort Circle Parks." The 2004 Fort Circle Parks Final Management Plan, lists the park's linkage of urban green spaces, the preservation of significant natural features, and diversity of habitat as aspects of the park's importance to the system. The purpose of the transfer

would be expansion of an existing ice rink and facilitating the construction of a youth baseball academy by private groups on the transferred land.

Fort Dupont Park is a special place because it supports several healthy native forest communities, including a globally rare terrace gravel forest community, known as an Oak-Heath Forest. These forests exist on ancient terraces along the Fall Line between Philadelphia and Richmond. The ancient terrace gravels have acidic soils and are prominent locations for these forests. They have become rare due to the development of these habitats, which lie along the I-95 corridor. A healthy

mature lowland forest, predominated by mature sweetgum and willow oak trees also grows at Fort Dupont Park, with mature trees that are 80 to 100 years old.

The NPS Environmental Assessment produced a finding of no significant impact in December of 2008. The finding relied on mitigation measures to conclude that impacts to natural resources would be "of short duration and negligible intensity." No current proposal calls for the removal of the forest. However, the concern is that construction adjacent to the forest edge will alter drainage patterns, disturb the root systems of trees along the forest edge, and create conditions conducive to invasive species.

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• Top plants

(Continued from page 6)

masses in fields that were once cultivated. Physicians in ancient times believed that goldenrod had healing powers. In recent times these plants have been popularly blamed for causing hay fever, but those irritating symptoms are actually caused by ragweed (*Ambrosia* species), whose pollen is abundant when goldenrod is in flower.

Cardinal Flower (*Lobelia cardinalis*)

Cardinal flowers, or bellflowers, have erect leafy stems topped with clusters of bright red flowers resembling flaming red spires. Cardinal flowers are often found along moist shady slopes, sunny stream banks and other damp sites. Did you know? Since most insects find it difficult to navigate the long tubular flowers, cardinal flower depends on hummingbirds, which feed on the nectar, for pollination. Its common name alludes to the bright red robes worn by Roman Catholic cardinals.

New York Ironweed (*Vernonia noveboracensis*)

New York ironweed is made up of tall stems that branch toward the summit. At the top of each is a cluster of deep lavender to violet flower heads. Did you know? This often roughish plant is common in wet open bottomland fields.

• Natural Area Preserves

(Continued from page 2)

and Stafford County purchased 1,770 acres, the first phase of a two-phase land purchase to protect Crow's Nest as Virginia's 54th state natural area preserve. Funding for this purchase came from DCR, Stafford County, the Virginia Department of Environmental Quality and the Aquatic Resources Trust fund of the U.S. Army Corps of Engineers and The Nature Conservancy.

Crow's Nest is a highly significant and beautiful place and the topography of Crow's Nest is quite varied. The high, narrow peninsula rises 160 feet above the tidally influenced Potomac and Accokeek Creeks, and is deeply dissected on both its northern and southern sides by a series of ravines cutting steeply down to the bordering creeks. The Phase 1 purchase at Crow's Nest has protected:

- 651 acres of tidal and non-tidal wetlands, including 452 acres of decreasing wetland types. The wetlands on the Crow's Nest peninsula account for 60 percent of all the marshes in Stafford County, and represent some of the best examples of diverse and intact wetland habitats in the Potomac River drainage.
- nesting bald eagles, habitat for the federally listed short-nose sturgeon, and

habitat for 22 plant species that are significant for the Coastal Plain of Virginia.

- habitat for about 60 species of neotropical migratory songbirds, nearly 60 percent of which are experiencing population declines, including 10 species that are high global priority species of Partners In Flight.
- 1,100 acres of mature hardwood forest including two forest types that are recognized as globally rare by DCR's Natural Heritage Program.
- spawning, nursery and/or feeding habitat for 49 species of interjurisdictional fish and seven species of mussels and commercially valuable shellfish.
- a property that has played an important role in the Native American, Colonial and Civil War histories in Virginia.

VISITATION: The large area of open-space protected as Crow's Nest Natural Area Preserve, plus its location near a major population center, represent great potential for providing passive recreation and outdoor education opportunities for large numbers of Virginia's citizens. However, significant staff and operations resources are needed before public access can be effectively implemented at the preserve.

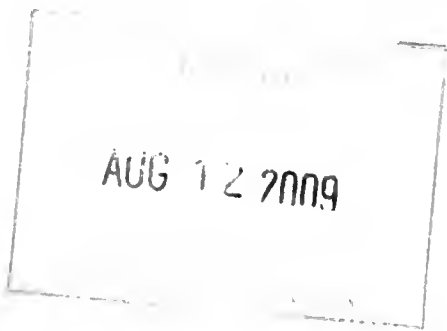
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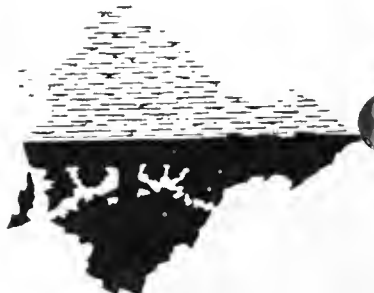
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Conserving wild flowers and wild places

www.vnps.org

The Art of Virginia's Flora

To usher the *Flora of Virginia* along in the final push to publication (scheduled for 2012), the Flora of Virginia Project is offering a special edition of *Flora* illustrations in recognition of leadership gifts made between now and July 31, 2010.

Lara Call Gastinger, award-winning chief illustrator of the *Flora*, has selected 10 of her pen-and-ink drawings and hand-colored them in watercolor, to magnificent effect. Collector's editions of fine-art reproductions of those works are available only through this limited offer.

The reproductions are created using the giclée process, in which microscopic dots of ink are sprayed onto archival fine-art paper, for a print that is virtually indistinguishable from the original. The drawings are depicted online for your consideration; please visit floraofvirginia.org/flartofflora.shtml to see the artworks and to find a printable donation and print selection form.

The number of reproductions offered varies with the level of giving:

- \$1,000–\$9,999, any two prints
- \$10,000–\$49,999, any four prints
- \$50,000 or more, a full set of the 10 prints

Caltha palustris
L. var. *palustris*
marsh marigold
Print by Lara Gastinger



The reproductions are ideal for commemorating a special day or event and will make a cherished holiday gift. They measure 8.5 inches x 11 inches, have deckled edges, and will be presented in an elegant archival portfolio, each print accompanied by a Certificate of Authenticity signed by Ms. Gastinger.

(See *Flora Project*, page 3)

Rain didn't dampen Annual Meeting atmosphere

Another September and another annual Virginia Native Plant Society meeting have come and gone! The September 25-27 meeting held in the Roanoke Valley was a success on all fronts and turned out to be a very enjoyable weekend.

As members began to arrive on Friday, a slow rain was falling across the

mountains and valleys of the Blue Ridge. All were hoping this was not going to be the entire weekend's weather. The Friday night lecture by Peter Heus of Enchanter's Garden in Hinton, West Virginia, on "Native Plant Propagation Techniques" was a real treat. Peter brought several plants with him and lots of material to be used

in a hands-on presentation. He talked about the collection, processing, storage and planting of fruits and seeds. He also talked about some asexual reproduction techniques but added that he preferred the use of seeds to provide genetic variability.

As the members assembled for field
(See *Annual Meeting*, page 8)

INSIDE: Go "Native" with holiday gifts, page 2



From the president

Fall days bring thoughts of winter reading

The Annual Meeting has concluded, but I can't let it end without saying how much I appreciate the efforts of our Blue Ridge Wildflower Society and New River Chapter in making it happen. Our silent auction at the event raised about \$1,300 for the Flora of Virginia Project. Thanks to all who came and participated. Welcome to our newly elected board members Deauna High, Director at Large, and Bland Crowder, Publications Chair, and to Nancy Vehrs, who has agreed to accept a board appointment as Recording Secretary. Thanks also to re-elected Botany Chair John Hayden, and to new and continuing chapter presidents and representatives and other board members who continue to serve.

Your board is busy planning our next March workshop, March 6, 2010, in Richmond on Coastal Plain Flora. We are also busy organizing some field trips across the state. And you can mark the calendar for next year's Annual Meeting. The Piedmont Chapter is planning to host the meeting September 10-12, 2010, using the facilities in the Skyland area of Shenandoah National Park.

The board also voted to join a coalition of environmental groups from Virginia and the nation to promote habitat preservation. The Teaming with Wildlife initiative includes a 10-year Wildlife Action Plan. The plan or a summary can be viewed at bewildvirginia.org/wildlifeplan/. The website states "Virginia's Plan identifies 925 species of greatest conservation need, which represent a broad array of wildlife, and it focuses on the habitats that support these species, such as caves, high-elevation forests, coastal marshes, barrier islands, grasslands, small headwater streams, vernal pools, and many others."

I've been enjoying fall, but a recent rainy, chilly week also has me hoarding books for the winter months. Recently, I found Amy Stewart's **Wicked Plants: The Weed that Killed Lincoln's Mother & other Botanical Atrocities**. (See our August 1995 **Bulletin** for more about white snakeroot.) A preview shows a range of subjects including the expected poisons and drugs, things you don't want to touch, and invasive plants and algae. Others I am looking forward to are **Ginseng: the Divine Root**, by David A. Taylor, and **The Brother Gardeners: Botany, Empire and the Birth of an Obsession** by Andrea Wulf.

There is a great interest in trees this year as a result of the book **Remarkable Trees of Virginia**. Co-author Nancy Ross Hugo recently recommended the new **Sibley Guide to Trees**, similar in style to his popular bird book. **The Wild Trees: A Story of Passion and Daring**, by Richard Preston, tells of people who climb the coast redwoods to study their growth habit and all of the other life forms that grow up high.

It's a tight year for funds as you are aware, but please keep in mind the VNPS 2009 Fundraising drive called **Natural Treasures Hunt**, which seeks to raise money for a project that the Natural Heritage Program will conduct next season. The more we raise, the more plants can be visited. Remember that donations make great gifts for people who have everything. Thank you VNPS for your generosity and your concern for our plants.

Your President, Sally Anderson

Go "Native" with your holiday gift giving

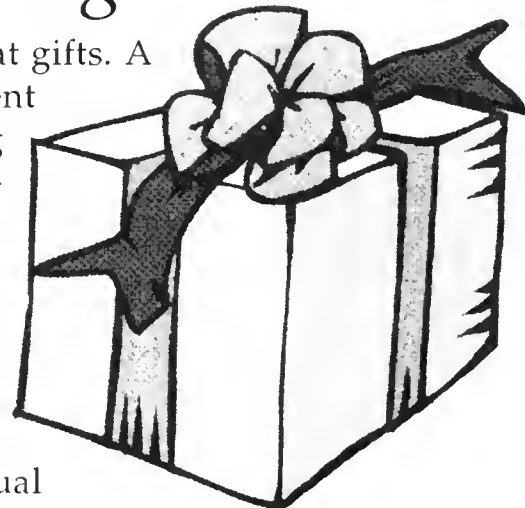
The holidays are coming, so think "native plants" when deciding on the right gifts. A present for the person who already has plenty of "stuff" might well be a commitment in his or her name to the future of our ecosystem through the VNPS 2009 Fundraising campaign, Natural Treasures Hunt, or to the Flora of Virginia Project. We will acknowledge the gift from you and send a card to the recipient.

Give a gift of VNPS membership. If you have not yet done so, you can give one individual or family membership for FREE this calendar year. This offer can also be used by life members. If you have used up your free membership, buying someone a membership is still an option.

VNPS T-shirts are now on sale for \$10 plus shipping, while note pads are four for \$10 plus shipping. The paperback book, *Bringing Nature Home*, by our Annual Meeting speaker Doug Tallamy is available for \$20 plus shipping.

To find out more about these gift options or to order, contact the VNPS office at vnps@shentel.net or 540-837-1600.

Remember we can now take credit cards, so you can order by phone.





Castilleja coccinea (L.)
 Sprengel Indian
 paintbrush
 Print by Lara Gastinger

•Flora Project

(Continued from page 1)

Note that this unique opportunity is not designed to recognize earlier donations. Prints will be mailed within 60 days of receipt of a donation or, for pledges, of fulfillment of the pledge. Pledges must be fulfilled by July 31, 2010. Donations are tax-deductible, less the value of prints received.

For more information, please call Bland Crowder at the Flora Project at 804-371-5561.

There's a fine art to conserving Virginia's plants. Won't you help the Flora of Virginia with a leadership gift today?

Bland Crowder
 Editor, Flora of Virginia Project

Orchid journal available

The third issue of the *North American Native Orchid Journal* for 2009 is now available at no charge at culturesheet.org/wiki:user:nanoj:start. Back issues to volume 5 (1999) are also available. Volumes 1-4 are in process and may be posted early in 2010. The on-line edition of the *Journal* is available free to all.

The green illusion of lawns

The husband just had surgery (honestly, not my fault this time) and can't mow the lawn. So, seduced by our new solar panels into shopping for electric gadgets I never knew I needed, I bought a cordless electric lawn mower. No more pulling that darn starting cord every time a tussock stops me on the scruffy paths we maintain around our Appalachian homestead.

But while Googling which mower to buy, I stumbled into something far more serious than simply choosing the best tool to destroy the natural environment around me. I found religion. The culture wars have moved out on the lawn.

A green sward around the manor has gone from designating 18th-century aristocracy to expressing modern, middle-class homeowner righteousness. Since 1841, when the first American landscaping book called for "grass mown into a softness like velvet," lawns have become a national passion. "A lawn bespeaks . . . personal values," claims the Lawn Institute on a website that explains the environmental benefits of lawns, which consist largely of being better than bare, eroding soil.

Lawns are a form of ecocide that most people prize as a standard of aesthetics if not morality. Our lawns now cover 21 million acres, an area nearly the size of Pennsylvania. Statistics for the Chesapeake Bay watershed are hard to find, but Maryland alone mows close to a million acres of lawn, most of it surrounding single family homes.

According to the U.S. Environmental Protection Agency, Americans spend some \$30 billion a year maintaining lawns; one acre costs more than raising an acre of corn or rice, two of the world's major food crops.

Mowing uses 800 million gallons of mostly foreign gasoline a year, not counting the paltry, but toxic, 18 million gallons spilled during refueling. Burning fossil fuel in a conventional mower spews so much air pollution—like driving a car half a million miles a year—that Los Angeles and other smoggy cities have offered programs to swap gas for electric mowers. Lawn lobbies prevented regulation of mower emissions until recently.

My mower (I named it Snipper) emits nothing except grass clippings, useful for compost. Our solar photovoltaics supply about 70 percent of the electricity to recharge it, which helps offset emissions from the coal burned for the rest of the necessary electricity.

At 76 pounds, Snipper weighs nearly two-thirds of what I do, but handles easily, and makes about half the noise of a conventional mower. It used to be so quiet here on Cross Mountain that I would hear trees fall instead of lawn mowers. Now I hear trees falling to make lawns.

The development of riding mowers has contributed to massive spreads of suburbia in backwoods, and some amazing backside spreads, too. The loss of wildlife habitat is beyond calculation, especially because lawns often ruin what could serve as essential wildlife travel corridors connecting islands of habitat.

Lawns soak up nearly a third of all water used in the U.S., much of it treated drinking water. As water drains from lawns it carries residues from 70 million pounds of pesticides every year, 10 times more per acre than agricultural crops. Sales of lawn care pesticides to Americans accounted for about a third of total world pesticide expenditures, in 1997, according to the EPA, and we suspect little has changed for the better since then. Many of these chemicals are known to be carcinogenic in animals; others have never been tested, although children playing in the grass constitute an unofficial test.

Lawns examined have aspects of Hell as well as Eden. As society takes going green more seriously, the anti-lawn movement that has been languishing for decades is growing a few new "plants-roots." Dozens of websites and books advise on how to create lawn alternatives from prairie to forest, and online testimonials confirm that people who mow less have more fun, because they have more time for it.

(See Lawn woes, page 6)



Inside the VNPS Annual Meeting

Author delivers inspiring talk

The late September Annual Meeting of the Virginia Native Plant Society near Roanoke saw hearty attendance well over 100 (did I hear 130?!). I drove west with a new VNPS member, and ran into several others from the Clayton Chapter at the meeting. The weather was dreadful, but in perfect VNPS/Master Naturalist style, we didn't let it keep us indoors. A highlight, however, was the (indoors) keynote speaker on Saturday night, Doug Tallamy, author of *Bringing Nature Home* (and University of Delaware professor in his spare time). If you don't have this book, get it now. It's out in paperback. I have purchased four copies so far and have only kept two; one went to Hugh Beard (a high school environmental sciences teacher) and one went to Carol Heiser at the Virginia Department of Game and Inland Fisheries. Hugh said it was mind-blowing.

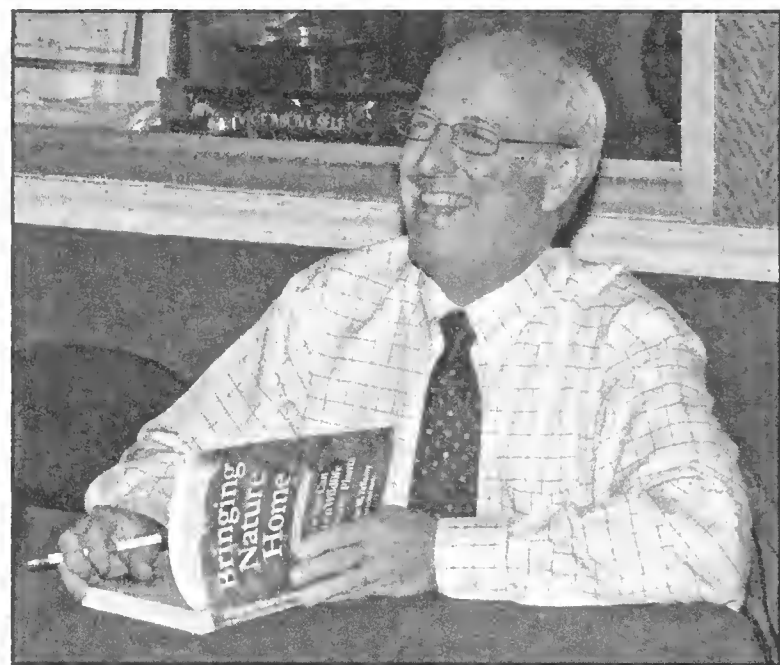
Doug spoke eloquently about the problems in modern society and their impacts on the environment. At one point, he summed it up by saying that most of us feel that

"Nature is well and happy someplace else." While we, in contrast, are well and happy in the center of our "sterilized" lawns and (mostly nonnative) landscapes. I'll just summarize a few of his best points:

- In healthy ecosystems, there is a lot of redundancy; niches and positions in the food web are covered by more than one species or organism. However, with the lower biodiversity of most of our suburbs and developed areas, the redundancy is lost; when one species or niche disappears, the whole food web crashes.
- Where there is greater plant diversity, there is greater animal diversity. Biodiversity is an essential, non-renewable resource.
- There is such a thing as "functional extinction" when numbers of a particular plant or animal in an area get so low that they are not able to perform their function in the food web/ecosystem. If one were to claim that because there are no documented examples of extinctions due to nonnative invasives, that claim would be not only largely irrelevant, but also wrong (Tallamy says that there are, indeed, such examples on islands).
- Native plants are usually better able to support the food web. He defines "native" as being an organism that shares an evolutionary history with the species in a given area. For example, many caterpillars can only survive and reproduce in the presence of three or fewer plant types! That's because those caterpillars have co-evolved in the presence of a specific plant to be able to digest its leaves despite the defensive toxins that the plant has developed to protect itself!

- When we buy and plant nonnatives, we are depriving wildlife of

(See *Inside VNPS*, page 7)

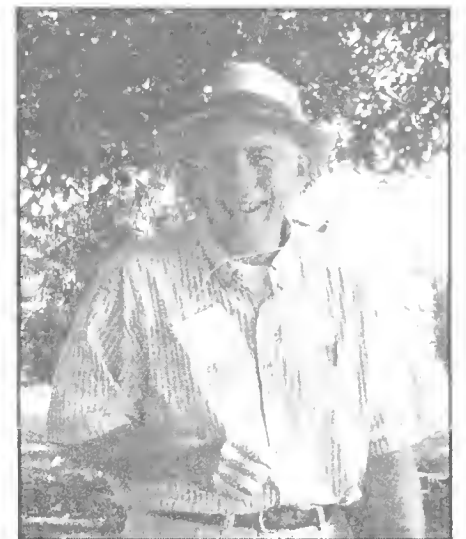
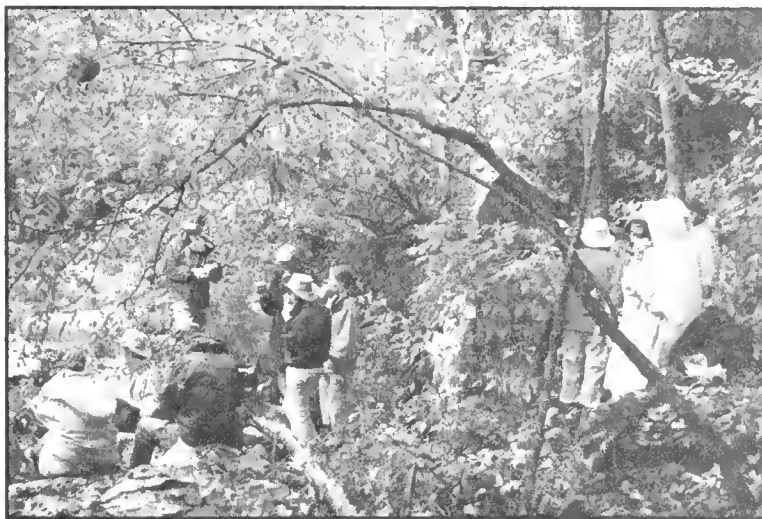


Doug Tallamy, above, autographs his book while, left, Kim Strader and Peter Heus (of *Euchaeter's Garden*) talk plants during the inside portion of the VNPS Annual Meeting. The photo at the bottom right shows the silent auction in full swing.

(Photos Larry Wilcox)



Outside the VNPS Annual Meeting



Saturday field trips, top and bottom, were conducted in the rain, but Sunday's big tree walk was sunny. Trip leader Jeff Kirwan was all smiles during his walk. (Photos by Larry Wilcox)

There are ash trees, and then there are ash trees.

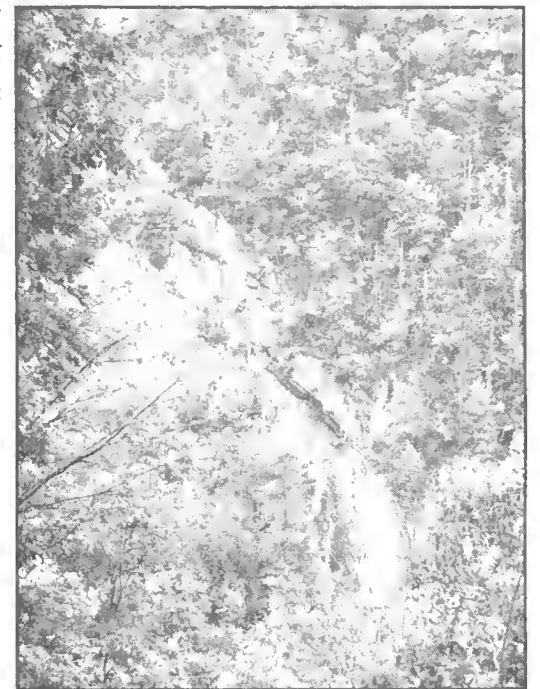
Every VNPS annual meeting is a time for discovery offered by the Annual Meeting's celebration of Virginia's wild flowers and wild places. For 2009, we gathered in Salem, late in September, as guests of the Blue Ridge Wildflower Society and our newest chapter, New River (Blacksburg/Radford region).

Butch and Betty Kelly and the chapters' members ensured that we would discover the botanical treasures of the Roanoke/Salem-Blacksburg/Radford mountains. One of my discovery moments came when I learned that prickly ash and wafer ash are not in the *Fraxinus* genus of the Oleaceae family at all. They are both in the Rutaceae family and are specific host trees for Virginia's giant swallowtail butterfly and palamedes swallowtail.

In *Bringing Nature Home*, author Doug Tallamy, an entomologist, describes the role of native plants in supplying a bird's grocery store—the connection of native plants, insects and wildlife/birds that developed gradually over eons. It is not a matter of "taste choices," but more a matter of them learning to eat what is available. Locating its host plant is a matter of life and death for many insect species, including butterfly larvae.

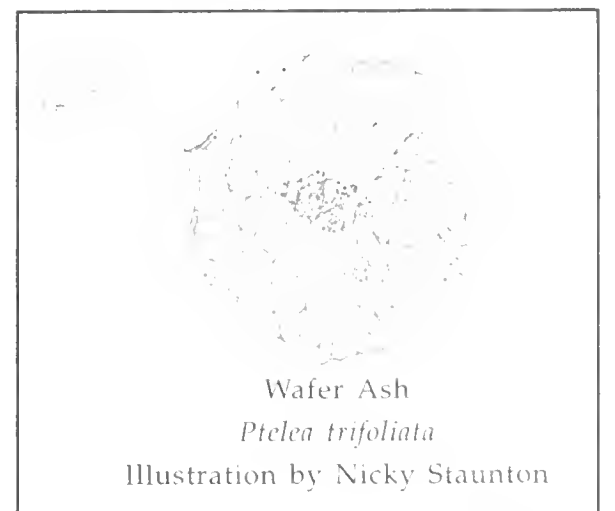
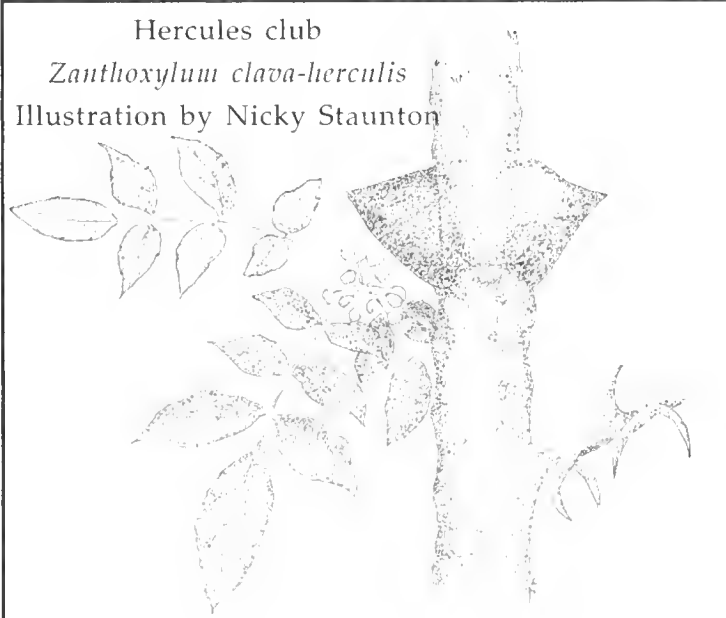
The field trip to Woodpecker Ridge Nature Center near Roanoke, a popular Virginia Birding and Wildlife Trail, was my morning discovery destination. There we thought we found both prickly ash or toothache tree, *Zanthoxylum americanum*, and wafer ash, *Ptelea trifoliata*. Both were in seed. The first was impressive for its astoundingly horrific thorns on the tree trunk. The second was impressive for the beauty of its clusters of paper-like wafer samaras. Neither tree-shrub is in the Oleaceae family. Their common names probably are based on the appearance of their compound leaves. Both are in the Rue family, Rutaceae, along with citrus plants that are not native to Virginia habitats. Crushed leaves of *Zanthoxylum* have a distinct lemon fragrance.

There's no question of misidentifying wafer ash.



Known also as the hop tree or stinking ash (because of the smell of its crushed leaves), the clusters of pale green samaras in September are eye-catching. Bruce Jones (Piedmont) praised this tree as a butterfly magnet. Both trees are small trees and suitable for butterfly landscaping in Virginia. *Z. americanum* is recorded in many Virginia counties, while *Z. clava-herculis* is in seven southeastern counties. (http://www.biol.vt.edu/digital_atlas/).

(See *Ash discoveries*, page 8)



*RICHMOND BIG TREE TOUR - A recent excursion by members of the Northern Neck Chapter wound up under this big tree at Maymont. Here Nancy Ross Hugo, author of **Remarkable Trees of Virginia**, and Champion Tree Expert Byron Carneau, stand with three chapter members. (Photo by Donald H. Lentz)*



BLM praises Millennium Seed Bank Program

The United States Bureau of Land Management Director Bob Abbey recently congratulated the Royal Botanic Gardens, Kew in its milestone accomplishment of collecting, banking, and conserving 10 percent of the world's wild plant species. For nearly ten years, the BLM has been a partner with Kew's Millennium Seed Bank Program in its native seed collection effort.

Created through this partnership, the Bureau's Seeds of Success program played a large role in Kew's ability to meet its goal on time and under budget. This nationwide seed-collecting network of teams has made over 8,500 wildland native seed collections to support the Native Plant Materials

Development Program and simultaneously seed banked over 10 percent of the U.S. flora for future generations.

"The success of Kew's Millennium Seed Bank in seed banking 10 percent of the world's flora is evidence of the positive outcomes realized through BLM's partnership agreements," Abbey said. "Not only is BLM leading a national effort to develop diversity and quantity in native plant materials for restoration and rehabilitation projects, but the agency is also shaping global conservation in the face of today's environmental challenges."

BLM's partners in its Seeds of Success program include Chicago Botanic Garden, Lady Bird Johnson

Wildflower Center at the University of Texas at Austin, North Carolina Botanical Garden, New England Wild Flower Society, New York City Department of Parks and Recreation-Greenbelt Native Plant Center, and Zoological Society of San Diego. Seeds collected are stored in the U.S. and England for long-term conservation, as well as short-term storage for the distribution of seeds to any researcher interested in working with native seed.

•Lawn woes

(Continued from page 3)

But lawns continue to grow at the rate of almost 400,000 acres a year. Many people like to mow; like commuting, mowing offers a rare byte of personal time, plus real conquest to show for it. Homeowner associations and municipalities often impose lawn standards, even in deserts, although these have been successfully challenged. In 2007, a bruised, 70-year-old grandma

in Orem, Utah, made international news when she was jailed in handcuffs for letting her grass go brown. She bargained the charge down to disorderly conduct and a \$100 fine. Clearly, it will be a while before we as a nation are ready to admit that we fought the lawn and the lawn won.

Article by Chris Bolgiano and distributed by the Bay Journal News Service (<http://www.bayjournalnewsservice.com/Lawn.html>).

Southwest Virginia 2010

VNPS will travel to Southwest Virginia in the spring to enjoy the botanical wonders of the southern mountains. The trip will begin on May 9 so mark your calendar. More details and sign up information will be in the winter 2010 newsletter.



• Inside VNPS

(Continued from page 4)

food; a "pest-resistant" plant is a food-free plant. For example, the butterfly bush only supports *one* species of butterfly. Sure, more species feed on the nectar, but when it comes time to reproduce and make more butterflies, the butterfly bush is virtually useless as a food source. Oaks, on the other hand, support over 500 species of butterflies.

• Moving up the food chain, this matters because birds need insects (including caterpillars) to feed their young. They cannot raise their nestlings on seeds and nectar. The protein in insects is very high quality and absolutely essential for baby birds. So, says Tallamy, without (native) insect host plants, "we feed the birds all winter and

Plants 'root' for kinfolk

Human siblings don't always get along. But in the plant world, it may be a different story. Researchers at the University of Delaware have homed in on a way that plants can not only recognize family members close by, but support them in their battle for survival. In short, how plants recognize their family and have each other's backs.

The team has determined that the root cause lies in the roots, more spe-

then starve them in the summer."

• In general, woody plants support far more biodiversity than herbaceous plants. But both are necessary for habitat.

• Regarding nonnative invasives: Japanese honeysuckle, for example, was used in landscaping for 80 years before it started to become invasive. It's not known how or why that happened, but it means that we can't know in advance if something will eventually cause problems.

• Finally, in answering my last-minute question, Tallamy confirmed that the notion of keystone species (a species having a disproportionately large effect on its ecosystem) is of only limited usefulness in protecting habitat/food webs. "Anything can be a keystone species in the right circumstances," he said.

cifically in root secretions. They placed young seedlings in liquid media, some with secretions from the brothers and sisters—some with their own and some with secretions from strangers.

Like watching grass grow, the researchers carefully monitored 3,000 plants for seven days. When siblings were grown next to each other, they "played nice" and didn't send out roots to compete with one another. But when thrown in with strangers, it was "game

In an hour-long presentation, he gave us more information (and ammunition, frankly) than we could really take in. The room was so quiet you could have heard a pin drop. He ended with several slides about how we need to take these messages to our suburban environments and turn them back into places that we share with nature and wildlife. A suggestion was to take 50 percent of the lawn acreage of every yard and plant it with natives and create native habitats. Connect the yards with hedgerows and contiguous planted areas. It won't obviate the habitat fragmentation/edge impacts, but it could be a huge improvement over what we have now. And conserve a heck of a lot of water in the bargain. And provide living outdoor spaces for us and our children. Amen

Kathi Mestayer, John Clayton Chapter

on"—the plants rapidly grew more roots to compete for water and nutrients. In fact, they put so much energy into growing roots, that the plants themselves were often shorter. The researchers also noted that sibling plants often allow leaves to touch and intertwine, whereas strangers avoid each other.

The study has implications from agriculture to home gardening. And this is just the beginning. When it comes to plant families, they're "rooting" for each other.

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The deadline for the next issue is **Jan. 15**

Ash discoveries

(Continued from page 5)

Nearby, Bill Donahue, our field trip leader, identified the prickly ash. We believed it to be *Zanthoxylum americanum*, but looking at my photos, the humongous thorns on the slender lichen decorated trunk seem to fit *Zanthoxylum clava-herculis*. The plant, commonly called Hercules' club, is aptly named a "club." At the time, I didn't know its fruit is positioned differently for the two species and my image does not reveal clearly which prickly ash we saw. Botany Chair John Hayden kindly looked at my images and could tell, "based on the terminal (not axillary) position of

the fruit clusters" that we had seen *Z. clava-herculis*. (Note to photographers, it helps to know a plant's distinguishing features for better camera positioning.)

Sometimes, prickly ash is confused with *Aralia spinosa*, devil's walking stick, the bane of walkers who slip and grab a nearby small trunk for balance. Seldom have I seen a mature *A. spinosa*. Often in retaliation for pain, it is hacked down. Note that its macrocephalic blossom head is a popular nectaring site for all butterflies and it offers berries for wintering birds. Just keep your balance while passing by.

Because these three trees have little

wood value, they are treated as trash trees and not considered worth keeping on land that could produce income.

The Rutaceae family plants have records of folk medicinal uses, and American Indians used *Ptelea* as a tonic for various of ills; tea as a de-wormer; bitter fruits as a substitute for hops in beer making and they used *Zanthoxylum* as a tea for a variety of ills and chewed bark for toothaches. (Peterson's Series *Eastern/Central Medicinal Plants*, Steven Foster/James A. Duke) A toothache tree berry chewed by one of our group did numb tissue in the mouth.

Nicky Staunton, a grateful student of botany and 2009 field trip participant.

Annual Meeting

(Continued from page 1)

trips Saturday morning, it was clear that the weather had worsened and the heavy rain continued during the day and into Saturday evening. But no devoted native plant enthusiast is going to be deterred by rain! All the field trips went off as scheduled and a great time was had by all. By the time the evening events were taking place, hearty discussions were going on about the trips.

The social hour and silent auction started the evening. No actual fights were observed during the auction, but some pretty testy bidding occurred. The final auction tally was over \$1,300 all for the Flora Project of Virginia. *Thanks to all!* The buffet dinner was followed by a presentation from the University of Delaware's Doug Tallamy entitled "Bringing Nature Home." His excellent words should serve as a wake-up call to all present in the audience and to those reading

his book by the same title. I think Dr. Tallamy should be the pied piper for all who love native plants and desire to see more of them planted in landscaped areas around homes and businesses.

By the time we left the facility Saturday night, the skies had opened up with more rain. By Sunday morning, we had received over 3 inches of rain and there were reports of some areas receiving over 5 inches. However, the rain stopped and a cold front swept through the Roanoke Valley. Dark clouds still lingered but blue skies were breaking out. When the scheduled field trips began the sun was shining and all were excited about getting back in the field. The board meeting was held and by Sunday afternoon all were headed home and happy to see the Blue Ridge Mountains and the great Shenandoah Valley under the sunny blue sky.

Rich Crites, Blue Ridge Wildflower Society

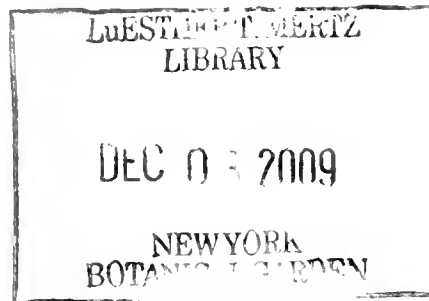
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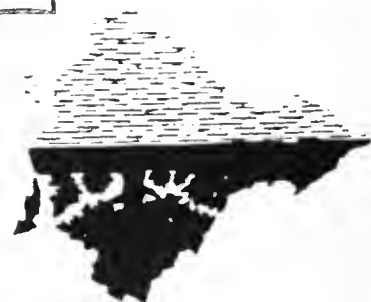


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