

Coal Country Beeworks *An Experiment in Apiforestation*

By Tammy Horn, Eastern Kentucky Environmental Research Institute

The Coal Country Beeworks promotes a fundamental principle: diverse economies depend on diverse landscapes. In order for the colonial status of Appalachia to change, the unique mesophytic forests that existed prior to mining need to be reestablished so local people can be beekeepers, honey producers, queen rearers, scientists, etc. In this way, the two-tier economy that has defined Appalachia for the past hundred years can be diversified.

The Coal Country Beeworks has already been initiated by the establishment of 30 sentinel hives (donated by Ed and Elaine Holcombe), in Perry County. This is the county where surface mine destruction was chronicled by Erik Reece in his highly praised 2005 *Lost Mountain* book. Instead of focusing on high-value hardwoods, as previously encouraged by the Appalachian Regional Reforestation Initiative (ARRI) and the coal companies, this project focuses on the planting of sourwood (*Oxydendrum arboreum*), normally considered a "trash" tree. As beekeepers know, sourwood makes one of the finest honeys in the United States, and Appalachia is the only place the sourwoods grow. Sourwood is also a midsummer bloomer in KY, providing nectar when other plants have already bloomed; it blooms fairly reliably by July 4. Currently, ARRI is modifying its standards to promote this new form of reclamation focused on the planting of pollinator-friendly flowers and trees, a practice I have termed *apiforestation*. In keeping with previous

standards of the ARRI, we are continuing to encourage the retention of 4 feet of subterranean soil, and require less compaction on the mine sites to be reforested.

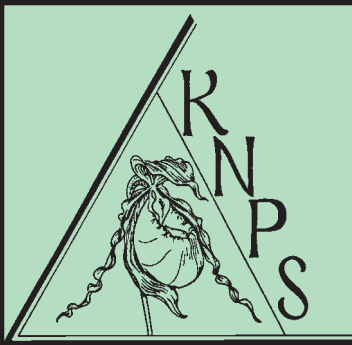
Some coal companies have already started with these new plantings. In January 2008, International Coal Group, LLC Hazard, planted 2000 sourwood trees on three mine sites. Another coal company, James River Coal, also participated once the president saw the publicity that ICG, LLC Hazard was receiving. That company has also planted 2000 sourwoods, but finding sourwoods has been difficult and expensive. The nursery industry generally needs four years to adjust to new demands, and so we considered 2008 to be the first year of this new demand for sourwoods. In addition to the 30 sentinel hives, we now have 10 additional hives because James River Coal opened a beeyard, so that we have 40 hives scattered in tiny communities throughout Perry County: Rowdy, Vicco, Jeff, and Thunder Ridge.

Continued on page 6



Author and assistants at a hive
Photo provided by Eastern Kentucky University

In this issue--	
Coal Country Beeworks	1
Using virtual herbaria.....	2
Serrated tussock.....	4
Fall KNPS Conference	5
Rain Gardens and barrels	7
Tropical biology courses in Costa Rica and Ecuador	8
Native-Plant related events.....	8,9
President's Message	10
Book Review: Rare Wildflowers of Kentucky	11



The Lady-Slipper

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Using “Virtual Herbaria” to solve the mystery of Nuttall’s Silky Aster

by Ron Jones

The vast resources now available on the internet are revolutionizing botanical studies. In a recent instance, I was trying to locate several specimens of aster collected almost two centuries ago. In the past I would have to send out a series of letters to a wide range of herbaria in hopes that one of the herbaria might have the specimens in question. The herbarium then would inform me if the specimen could be borrowed, or if it was too fragile, I would have to travel to the facility to examine the specimen. If borrowing were permitted, then the specimen would have to be carefully (very carefully for old specimens) wrapped up, boxed up, and mailed to me as a herbarium loan. I would then study it, make appropriate decisions about its identity, and then mail it back. All this could take months. Fortunately, the internet has greatly facilitated this procedure.

Here is my question—What is the correct identify of specimens described as *Aster montanus* by Thomas Nuttall in his 1818 Genera of North American Plants? Nuttall noted that it was “nearly allied to the preceding [*Aster sericeus*], but distinct.” Later, Asa Gray treated it as a variety of *Aster sericeus*.

I needed to know the identity of these specimens because I was involved with 2 other coauthors in writing a treatment of two closely related species of the central and eastern U.S.—*Symphotrichum sericeum* (Asteraceae) and *S. pratense*. These species, formerly known as *Aster sericeus* and *Aster pratense* (or *Aster phyllolepis*), are very similar in their silky pubescence and large



Figure 1: *Symphotrichum pratense* from Tennessee (Holotype of *Aster montanus* Nutt.); image provided by The Philadelphia Herbarium at the Academy of Natural Science

involucral bracts. They have been referred to as silky asters or prairie asters. They are obviously very closely related, but it was determined in our study that all the populations in Louisiana, Mississippi, Alabama, Georgia, Florida, Tennessee, Kentucky, and Virginia were *S. pratense*, while *S. sericeum* was found from Canada to Texas and Indiana, and only overlapped the range of *S. pratense* in Texas. *S. pratense* is a state rarity in AR, KY, AL, GA, MS, TN, and VA. The most recent state added to the distribution of *S. pratense* was Virginia in 1999.

Curiously, in spite of Nuttall, and later Gray's comments about a similar plant in North Carolina, there were no additional records or known populations of an *Aster sericeus*-like plant in North Carolina. I needed to find the original specimen upon which Nuttall based *Aster montanus*—called the holotype, to see if it really was a specimen of the species we now refer to as *Symphyotrichum sericeum* or *S. pratense*. To solve this mystery, I went to the email and internet.

First I emailed suspected herbaria—in this case the mostly like herbarium to hold a Nuttall holotype was The Philadelphia Herbarium at the Academy of Natural Science. Fortunately, they had a specimen marked as a holotype, and informed me that they could send me an image together with full documentation and interpretation of all the handwriting and more recent annotations on the specimen. When I received the image via the internet (Figure 1), I immediately recognized it as *S. pratense* (because of the large heads and bracts), but was surprised to see that the specimen was from Tennessee and not North Carolina. So this solved one mystery, the holotype of *Aster montanus* was actually a specimen of *S. pratense*. Note: According to the rules of botanical nomenclature, the rule of priority applies—the correct name for a species is the first one that is correctly published, and in this case "*pratense*" is a Rafinesque name, and he published it in 1817, so it predated Nuttall's "*montanus*" by one year, and is the correct name to be used for the species.

But another mystery remained—was there a specimen of this species from North Carolina, as noted by both Nuttall and Gray (who specified Buncombe County as the site of a collection)? So I sent out another series of emails—this time I suspected that Harvard might have a specimen, since this was where Gray worked for so many years, but they could not locate a specimen from North Carolina. I had better luck with the New York Botanical Garden—the curators located a specimen, and they sent me not a specimen but a

code to access their "Virtual Herbarium." The Virtual Herbarium link led me to a sheet of mixed specimens (Figure 2)—the specimen on the left was identified as *Aster sericeus*, and collected by "Gibbes" from Buncombe County, NC, while the two specimens on the right were also identified as *Aster sericeus*, but were collected from Minnesota. An examination of the specimen image confirmed that the collection from North Carolina was indeed *S. pratense*. This was the specimen cited by Asa Gray, and is the first and only record of the species being present in North Carolina. Nuttall also indicated that he had seen the species in North Carolina, but no Nuttall specimen from North Carolina has been found to date (his Tennessee collection was selected as the holotype). My botanical mysteries were solved—I now knew that *Aster montanus* was a name that should go into the

synonymy of *Symphyotrichum pratense*, and that there this species once occurred in North Carolina—all the research being conducted at my desk over a couple of weeks using the handy herbarium internet resources and helpful curators, and not requiring letters and packages and long periods of time.

More and more virtual herbaria are becoming available for researchers and anyone interested in using herbarium specimens, and Kentucky herbaria are

continued on page 5

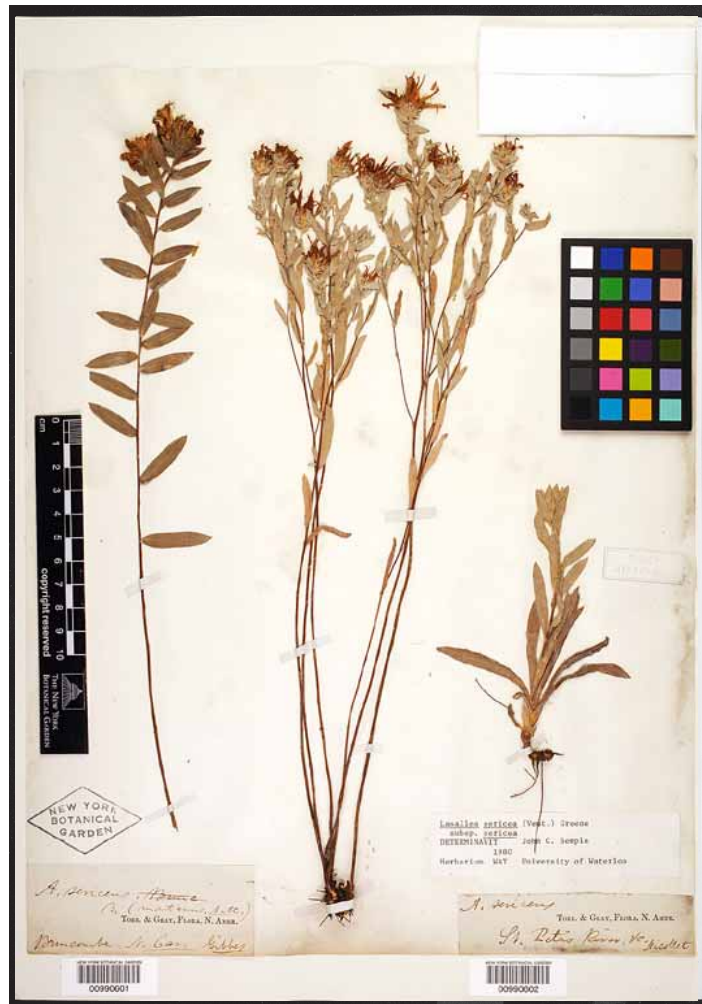


Figure 2: 19th century collection of *Symphyotrichum pratense* (left) and *S. sericeum* (right); Image provided by the New York Botanical Garden

THE SEARCH FOR SERRATED TUSSOCK IN KENTUCKY

By Randy Westbrook (U.S. Geological Survey, Whiteville, North Carolina)
and Patricia Haragan (Botanist, Louisville, Kentucky)

Serrated tussock, [*Nasella trichotoma* (Nees.) Hackel] a clump-forming perennial cool-season grass has spread from its native South America and is a major agricultural weed in pastures, fields, and other disturbed areas in Australia, New Zealand, South Africa, France, Italy and the United Kingdom. Although it has never been documented as growing in the United States, it was designated as a Federal Noxious Weed in 1983.

A member of the Grass Family (Poaceae) this wiry plant has thin, tightly rolled leaves with small serrations on the surface. Located at the junction of the stem and leaf blade, is the small, white, membranous ligule, 1mm long. The long, slender, branched inflorescence has purple florets with tufts of white hairs at the base and a long twisted awn.

Serrated tussock plants can live for 20 years or more and mature plants are said to produce approximately 140,000 seeds per plant per year. The seeds are light-weight and can easily be carried by the wind over long distances. In heavily infested areas, there are reports of it "raining" serrated tussock seed heads. Germination can take place any time of the year but is most common in fall and winter. Seedlings develop into small clumps or tufts during the first winter or spring but rarely flower in the first year. Research shows that 12 years are required to form patches and another 6 years to form dense stands.

This troublesome plant was introduced into the United States in 1988 as a contaminant of eight shipments of tall fescue (*Festuca arundinacea*) seeds from Argentina. The contaminant was detected during port-of-entry inspections by the United States



Image: www.dpi.vic.gov.au

Department of Agriculture in Jacksonville, FL, Houston, TX, and Portland, OR.

Following positive identification, the APHIS PPO staff in Hyattsville, Maryland, determined that the shipments could not be regulated under the Federal Noxious Weed Act due to a decision based on a clause that prohibits regulation of the Federal Seed Act shipments used only for the purpose of planting. With no authority to regulate the entry of these shipments, they were released by U.S. Customs to the importers where the contaminated seeds were made available for sale and distribution. In 1989, the USDA Office of General Council reevaluated the FNWA and issued a legal opinion that the contaminated shipments could be regulated under another section of the Act.



Invasion of serrated tussock in Australia

Photo: www.ppwcm.vic.gov.au

Most of the contaminated seeds were recovered, cleaned, exported or destroyed. However, by the time of the recall, over 24,000 kg of the contaminated seeds had already been sold to retailers in at least 49 counties found in Illinois, Missouri, Kentucky and North and South Carolina

Unfortunately, in 1989, in Pike County, Kentucky, 6818 kgs of contaminated fescue seeds were hydro-seeded onto a strip mine reclamation site owned by the Potter Mining Company. As a first step in the early detection process, educational materials and brochures were sent out by AHIS PPQ to alert state and local officials possibly impacted by these shipments. In addition, as a follow up, Dr. Bob Eplee and a contingent of other scientists from the APHIS Methods Development Lab in Whiteville, North Carolina, mounted a detection survey of the site in 1990 and 1991, in cooperation with Dr. Bill Witt and Dr. J.D. Green from the University of Kentucky. Fortunately, serrated tussock was never found at the site, and has not been reported elsewhere in Kentucky to date.

Since the imported shipments were very heavily contaminated with serrated tussock, it has always seemed curious that it was never found growing on the site that was hydroseeded in 1989. It could be that the seeds planted in Pike County were from lots in the shipments that were never infested to begin with.

In any case, it is an interesting footnote in the history of weeds in Kentucky and bears continual scrutiny. It is certainly worth a follow up survey to make sure that serrated tussock never actually took root in the hills and hollows of Pike County in eastern Kentucky.



ASTER-continued from page 3

beginning this effort also--the goal is to join the international effort to get all specimens databased and all specimen imaged and online in searchable databases. The detail available in these virtual images is often amazing, and many specimens can be enlarged and tiny details such as kinds of pubescence can be examined. Using these resources botanists can quickly search for specimens, find tantalizing bits of information, answer taxonomic questions, and maybe even use this information to conduct searches for species thought to be long vanished. Maybe somewhere in the mountains around Buncombe County, North Carolina a few populations of the silky aster still persist even today!



KNPS

FALL CONFERENCE 2008

November 14th and 15th
Mammoth Cave National Park
Rotunda Room, Mammoth Cave Hotel

SPEAKERS:

November 14th at 7:00 p.m.

Mr. Randy Seymour, author and botanist, will talk about his field work for writing *WILDFLOWERS OF MAMMOTH CAVE NATIONAL PARK*.

November 15th at 7:00 p.m.

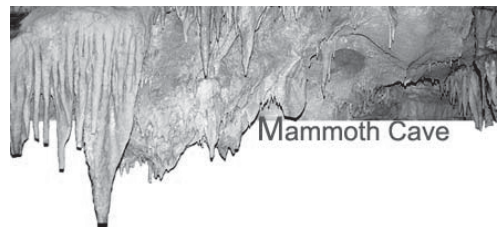
Dr. Dwayne Estes, botanist, Austin Peay State University and Curator of the Herbarium will speak about "Connections between the Kentucky and Tennessee Flora: species that occur near the Kentucky border in Tennessee that Kentuckians should watch out for".

Saturday Hikes:

10-noon, winter tree ID, with Alan Nations

2-5 pm, Barrens Habitats and Rare Species, with Dwayne Estes.

Call 270-758-2225 for more information. Rooms are available for \$60.00 a night plus tax. Food service also available at Hotel.



Membership Renewal Time!

Please renew your membership in KNPS promptly!

Dues for 2009 are:

Individual—\$15

Family—\$25

Lifetime—\$200

Membership forms are available at www.knps.org.
Make checks payable to KNPS, and send forms
and checks to: KNPS, P.O. Box 1343,
Richmond, KY 40476

BEES-continued from page 1

The goals for the next two years are as follows:

- Negotiate "right to use" land leases for four coal companies: Pine Branch Coal (Hazard KY); TECO (Whitesburg, KY); Peabody Coal (Evansville, IN); and Massey Energy (WVa).
- All coal companies make a commitment to plant sourwoods and basswoods as well as fall flowers and buckwheats.
- In addition, the companies commit to ten-year "right to use" leases and road maintenance as well as providing the labor required to plant trees and maintain roads.
- Provide training workshops for beekeepers and set up a beekeeping association.



Hive; Photo provided by Eastern Kentucky University

To keep the hives functioning through the late summer and winter, we need to provide supplemental food (MegaBee pollen supplements). We need to purchase wildflower and buckwheat seed and have identified a couple of possible sources. We also need to purchase an extractor in preparation for honey protection next year. One apiary is already producing honey, although that honey will be used to feed the other two apiaries through winter. It is expected that about half of the hives will need requeening by next spring. Our budget for this year is about \$40,000, and we are actively seeking funds to continue this project for next year.



Sourwood saplings planted by LLC Hazard in 2008; Photo provided by Eastern Kentucky University

The other part of this project focuses on outreach using extension methods that have been in place via cooperative university systems. Since many of the bee workshops have been promoted with UK

Cooperative Extension service, I have been able to use preexisting frameworks at no cost.

To date, we have the following statistics:

- 30 beehives on 3 sites owned by ICG; 10 hives on James River Coal, with one site being prepared;
- 4000 sourwood trees planted, some with success, some have been deer food;
- 2 beginners' workshops in Perry County, 45 participants;
- 2 science teachers' workshops, one on Thunder Ridge, one hive-building workshop: 50 participants;
- 2 conferences: Heartland Apiculture Society and Eastern Apiculture Society
- 2 students presenting at conferences: Hanna Watts presented at HAS on geographic information systems; Ray Eaton presented a current profile of the project at Appalachian Regional Reforestation Initiative conference Aug.9, 2008
- Two NPR-affiliate radio interviews, www.wkms.org and www.weku.org
- 1 television station shoot
- 1 film shoot with Ross McConnell, for *Colony*
- 1 meeting with Office of Surface Mining officials in Pennsylvania (Diana Cox-Foster from Penn State accompanied me)

From this point until next year, the following activities have been planned for the rest of 2008:

- 3 "beekeeping for girls" workshop scheduled for the fall;
- Undetermined amount of sourwood, basswood and fall asters, buckwheats, etc. to

continued page 10

Rain Gardens & Barrels: An individual's investment in cleaner water for our community



by Sarah Wolff

The Olmsted Parks Conservancy's mission is "to restore, enhance and preserve the unique value of Louisville's Olmsted Parks and Parkways for all citizens, and to extend this legacy throughout Greater Louisville for generations to come." Recently, the Conservancy has taken on projects to restore the natural areas within our parks and to improve the water quality of the streams within our community. So it's no wonder that we're big fans of rain gardens and rain barrels! No matter the size of an individual's rain garden, collectively we can make huge strides towards enhancing the natural environment around us. The size of the rain garden and the plants used depend upon the location and desired effect. But no matter the design, rain gardens work for us in many ways:

- Increase the amount of water filtering into the ground, reduce the amount of runoff and pollutants washing into our streams;
- Help to improve water quality for aquatic creatures in Beargrass Creek and other local streams;
- Help sustain water flow in our community's streams during dry weather;
- Reduce the chance of flooding in our community;
- Help protect the banks of Beargrass Creek from the eroding effects of large volumes of water travelling at high speeds;
- Reduce the necessity and cost of stormwater treatment facilities;
- Provide habitat for birds, bees and butterflies;
- Enhance the beauty of your property and neighborhood.

Rain barrels are another way for you to help improve water quality in our community if your yard is too small or steep to accommodate a rain garden. Rain barrels are attached to the downspout to collect rainwater coming from your rooftop. Most are fitted with a spigot for you to attach a hose, so you'd also be tapping into free water for your landscaping!

There are a variety of rain garden designs and rain barrels available. For more information about rain gardens and barrels call Sarah Wolff, Volunteer & Outreach Coordinator for the Olmsted Parks Conservancy, at 456-1623 or e-mail sarah.wolff@olmstedparks.org. You may also find links to more information provided at www.olmstedparks.org and www.msdlouky.org.



Check out our website at

www.knps.org

If you are receiving this newsletter in the mail, and would rather have it delivered via the Internet, please email amy_mcintosh6@eku.edu. Include in the subject line "Electronic KNPS newsletter".
Thanks!

Summer 2009 Tropical Biology Courses

COSTA RICA

TROPICAL DENDROLOGY

Two-week classes

April 20—May 2, 2009 (in Spanish)

June 27—July 4, 2009 (in English)

These classes offer intensive study of tropical trees while traveling through 4 life zones (dry, moist, wet, and cloud forests) in Costa Rica. A highly efficient teaching method is used, and students are able to identify about 80% of the important families and genera of Central America and Northern South America. Details and testimonials are available at www.hjimenez.org. Costs: US\$ 1600.00 which covers food and lodging (airfare not included). Contact: Dr. Humberto Jiménez Saa. Apdo. 86-1200/ San José, Costa Rica. FAX: (506) 22534963. Phones: (506) 2291-0862; 2231-1236 [hjimenex@racsa.co.cr](mailto:hjimenez@racsa.co.cr).

ECUADOR

Tropical Biodiversity and Conservation

4 weeks: June 24-July 20, 2009;

4 credit hours

Kentucky Institute for International Studies (KIIS)

Instructor: Dr. Ronald Jones

This 30-day course introduces the student to the extraordinary variety of plants, animals, and ecosystems of tropical regions. Students will observe and study the wide range of habitats in the natural regions of Ecuador—they will travel through the Andes, visiting Quito and Banos, stay several days in the rainforest of Upper Amazonia, and a week in the Galapagos Islands. Emphasis is on understanding biodiversity issues in the tropics and on conservation strategies needed to protect these dwindling resources. Prerequisite: One year of college-level biology or permission of the instructor. This course can be taken for undergraduate credit (4 semester hrs), graduate credit (4 semester hrs) or as an audit. Participants can also enroll in another 3 hr course (Economic Geography, Hispanic Culture, or Basic Conversational Spanish), for a total of 7 hrs credit during the 30 day period. The cost is still being determined, but is likely to be around \$4000 (tuition, food, lodging, and travel in Ecuador) plus airfare. For more information: <http://www.kiis.org>.

Olmsted Parks Events

Park Champion Volunteer Dates

Park Champion volunteers help restore, enhance and preserve the Olmsted parks. Make new friends, get some exercise, and have fun while making parks a more attractive part of the community. Register with Sarah Wolff at 432-2677 or sarah.wolff@olmstedparks.org. To check on weather-related cancellations call 432-2677.

November

November 1—Cherokee Park: Meet at Chauffeur's Rest on Barret Hill Rd between Cherokee and Sulgrave Roads

November 8—Iroquois Park: Meet at the Amphitheater

November 15—Cherokee Park: Meet at Chauffeur's Rest on Barret Hill Rd between Cherokee and Sulgrave Roads

December

December 6—Cherokee Park: Meet at Chauffeur's Rest on Barret Hill Rd between Cherokee and Sulgrave Roads

December 13—Iroquois Park: Meet at the Amphitheater

December 20—Cherokee Park: Meet at Chauffeur's Rest on Barret Hill Rd between Cherokee and Sulgrave Roads

Park Explorations

Olmsted Parks Conservancy invites you to come to the park and enjoy a beautiful and educational FREE walk in one of our historic parks. Space is limited so register early with Sarah Wolff at sarah.wolff@olmstedparks.org or 432-2677.

Shawnee Stroll

When: Sunday, November 2, 10:00am-12:00pm

Where: Shawnee Park— Meet at the Pavilion

What: Learn about the design, history, and ecology of Shawnee Park while walking along the loop and river walk. Easy hike.



OLMSTED PARKS
CONSERVANCY™



Plant Pioneers of Kentucky Speakers Series

In conjunction with the "Plant Pioneers" exhibit now on display at the Dorothea Smith Oatts Visitor Center, The Arboretum is presenting a special series of programs this fall to highlight Kentucky's rich botanical history. Each program costs \$8 (\$7 for Friends of The Arboretum). Call 859/257-9339 to pre-register.

The Arboretum is located at 500 Alumni Drive between Tates Creek & Nicholasville Roads in Lexington. More information can be found on our website at <http://www.ca.uky.edu/Arboretum/>.

The Plant Life of Kentucky: Past, Present, & Future in the Age of Global Warming.

Friday, November 7 at 6:30 – 8 p.m. Dr. Ronald Jones presents this fascinating look at the history, current status, and future of Kentucky's plant life. *Dr. Jones is Foundation Professor of Biological Sciences at Eastern Kentucky University and the author of the illustrated book, The Plant Life of Kentucky.*

E. Lucy Braun: Pioneer Forest Ecologist

Friday, November 21 at 6:30 – 8 p.m. Dr. William Martin presents this overview on the life of acclaimed botanist E. Lucy Braun. Together with her sister Annette, Braun pioneered the study of forest ecology in the Eastern U.S. The program will highlight Braun's work, arguments against her theories, and challenges currently facing Appalachian forests today. *Dr. Martin is Emeritus Professor & former Director of Division of Natural Areas at Eastern Kentucky.*

Natural Bridge State Resort Park

November 8-10 and November 15-16
Leave No Trace Beginner Backpacking

December 6
Exploring Arch Country Guided Hikes

For more information contact Park Naturalist Brian Gasdorf at Brian.Gasdorf@ky.gov or (606) 663-2214.

Saturday, November 8th @ 10:00 a.m.
Long Hike

Join us in enjoying the changes of the season on our annual long walk. This hike is approximately 5 miles long and is rated moderate to difficult.

Saturday, December 6th @ 1:00 p.m.
Winter Tree I.D

Warm up on this hike to Elk Lick Creek. Preserve Manager Beverly James will discuss how to identify trees by looking at their bark, buds, and leaf scars.

For reservations call (859) 351-7770; for more information see <http://www.floracliff.org/events.html>

Lower Howard's Creek Nature and Heritage Preserve

November 22, 9 a.m. — Long Hike

Limited to 15 hardy souls, this hike goes upstream on the West Fork tributary of Lower Howard's Creek to parts of the Preserve rarely seen. 4 hours, strenuous.

December 6, 9:00 a.m. – Ridgetop Views

The leaves will be gone so we'll do some ridge top hiking to catch the views of the valley, both upstream and down. 3 hours, moderately strenuous. We will be limiting the group size for all these hikes in order to maintain a good experience for everyone.

Please call the Preserve manager at (859) 744-4888 and leave a message to make reservations. Since this is a Kentucky State Nature Preserve, no dogs are allowed on the hikes. Children are welcome, but must be accompanied by an adult. Hikers should dress according to the expected weather. The terrain at the Preserve is quite steep and rocky, so please wear appropriate shoes or boots. Shallow creek crossings are a possibility on all hikes and your feet may get wet. Please call the preserve manager if there is a question about suitability of the weather. It is recommended that you carry water and trail snacks. Hike is free to members of the Friends of Lower Howard's Creek, \$5 donation suggested for each non member.

President's Message

I would like to extend my greetings to Kentucky Native Plant Society members for the last time as your president. It has been a short two year term and in the fall Alan Nations from Louisville has graciously accepted to hold the president's term for the next biennium. Please give Alan all the support you can, he will need it to meet some of the interesting challenges that face the society in the near future. In my tenure as president we did not get done what I had expected and hopefully Alan will be able to move the society forward on some important issues that will need to be resolved such as moving to an electronic newsletter, getting some momentum behind some good native plant protection legislation, and looking at ways of increasing membership. There are many folks out there who love native plants and wildflowers that are unaware that the society even exists. I speak from experience as I give talks on wildflowers and always mention the society and many are unaware of our existence. So please, when the new brochures become available, pick some up and leave in your doctor or dentist office, your local library, give to the local garden clubs (They are big into native plants now so lets help them out), and schools. We offer some valuable services and we need to keep up the good work.

By now hopefully you have made plans to attend the fall meeting at Mammoth Cave National Park. Even though we have once again gotten through another horrible drought, the programs should be quite enlightening. DeWayne Estes is an outstanding botanist and while working on the rare wildflowers of Kentucky, he was extremely helpful in assisting me with plant locations. I even helped him out with some hedge hyssop specimens from Kentucky. Of course, everyone probably knows Randy Seymour and his work on the wildflowers of Mammoth Cave. Randy is an entertaining speaker and I have no doubt will provide participants an excellent talk on where to find specific flowers within the park.

Winter will soon be upon us and now is the time to think about planting new wildflowers. A hot new gardening topic is the rain garden and of course native plants are the best specimens to use in these gardens.

Perhaps you can think about putting one in, I am going to do that this winter so that when spring comes rolling around, the garden will begin to look nice.

I have enjoyed the opportunity to serve as your president and I hope you will give the incoming President the same assistance you gave me as we meet the challenges ahead.

Thomas G. Barnes, Ph.D.



BEES-continued from page 6

- be planted by Pine Branch Coal and TECO (neither company has a "right to use" land lease at the moment, but we are working on that)
- Penn State research in viral diseases
- A meeting with Peabody Coal environmental research specialist and Indiana beekeepers (date to be determined)

In conclusion, apiforestation provides a viable and potentially profitable alternative for strip-mined lands. Reforesting surface mines with sourwoods means that Appalachia can compete in the honey market without having to compete with the clover fields in the Dakotas, or the citrus fields in Florida and California, or the tupelo swamps in Florida and Mississippi.



[Editor's Note: Tammy Horn is the author of the highly successful book *Bees in America: How the Honey Bee Shaped a Nation*, published in 2005 by the University Press of Kentucky. She is currently working on another book dealing with women and bees entitled *Piping Up: A History of Women and Bees*. More information about her projects is available on her website: www.tammyhorn.com.

For Further Reading:

- Barton, Chris. *Reclaiming the Future: Reforestation in Appalachia* (DVD). Lexington, KY: University of Kentucky Cooperative Extension. 2007.
www.arri.osmre.gov
- "The Economic Potential of Beekeeping on Strip Mine Lands." Co-sponsored with Dr. Alice Jones, ECU's Environmental Research Institute. ECU Student: Hanna Watts. National Science Foundation grant. 2007.
- Goodall, Jeff. *Big Coal: The Dirty Secret Behind America's Energy Future*. New York: Houghton Mifflin, 2006.
- Horn, Tammy. "Politics and Pollen: Mountain Top Removal's Potential Effects on Honey Bees." *Mountain Promise* 18.1 (2006): 9-10.
- Horn, Tammy. Rev. of *Big Coal: the Dirty Secret Behind America's Energy Future*. Goodell, Jeff. Houghton Mifflin, 2006. *Mountain Promise* 18.3 (2007): 14-15.
- Reece, Erik. *Lost Mountain: A year in the Vanishing Wilderness*. New York: Powell. 2005.
- Smith, Ron. "Honey Bees: Economic Opportunity or Environmental Hazard?" Richmond, KY. NPR-affiliate WEKU. June 25, 2008. This program later aired on West Virginia's "Inside Appalachia," July 19, 2008.
- The True Cost of Coal*. APS 229: Contemporary Issues in Appalachia. Citizens Transcripts. Lexington, KY: Kentuckians for the Commonwealth. 2007. (manuscript published from service learning project done in APS 229 Contemporary Issues in Appalachia course)

BOOK REVIEW: Rare Wildflowers of Kentucky

Thomas G. Barnes, Deborah White & Marc Evans
University of Kentucky Press
190 pp., \$39.95
by Mary Carol Cooper

It is a fortunate person who will actually get to see the Cumberland Rosemary plant in their lifetime. This rare wildflower is state endangered, federally threatened and known to exist on only one boulder bar in Kentucky.

In their quest to locate and identify hundreds of infrequent wildflowers, the authors of *Rare Wildflowers of Kentucky* have produced a book of beautiful photography and easy to read text that is sure to catch your attention. The book, which focuses on conservation and preservation, will inform and educate you and offer many concrete steps for conservation and preservation efforts.

Kentucky is losing over 160 acres a day to sprawl, new mega shopping centers, subdivisions, agriculture, logging, mountaintop removal, and exotic invasive plants and animals! Many fail to realize just what is being lost!!!! The beauty of our natural environment seems to be one of the things that is going by the wayside. The authors discuss the reasons for the decline of native species including habitat loss, pollution, invasive exotic species, people, and over collection.

That covered, they include the reasons for protecting native plants. Why the heck should we care—it is only a plant!!!! There are many intrinsic and extrinsic

reasons to protect these rare plants. Learn what these reasons are and what you can do about them.

Kentucky, a state that is much wider than it is long, is divided into natural regions: mixed mesophytic and deciduous forests in the east to prairies, glades, and savannahs in the central part of the state to wetlands and swamps in the western part. The rare plants are divided up into these regions including areas along rivers and along cliff lines and in Rockhouses. (To get a visual concept of this, take the "Walk Across Kentucky" at The Arboretum, State Botanical Garden of Kentucky in Lexington.) All native plants have adapted to particular habitats or natural areas. These areas form communities and to protect the rare plants in Kentucky it is necessary to protect these different natural communities.

The three authors, Thomas G. Barnes, extension professor of forestry and wildlife specialist at the University of Kentucky, Deborah White, branch manager and senior botanist at the Kentucky State Nature Preserves Commission, and Marc Evans, senior ecologist at the Kentucky State Nature Preserves Commission, have put together a beautiful, easy to read, inspiring collection of useful information and beautiful photos for everyone who is interested in conservation in Kentucky. *Rare Wildflowers of Kentucky* will inspire you to get on the trail to see some of these beautiful plants and to urge others to care about our beautiful state of Kentucky.



The KNPS's goals:

To serve as the Kentucky native plant education resource;

To support native plant research;

To support efforts to identify and protect endangered, threatened, and rare native plant species;

To promote appreciation of the biodiversity of native plant ecosystems;

To encourage the appropriate use of native plants.

KNPS Committees

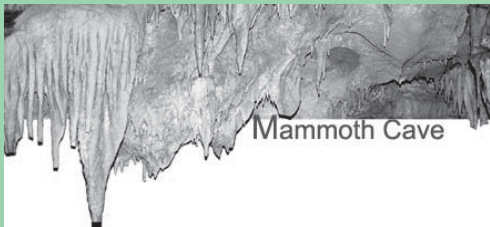
Membership: Co-chairs - Steve Sensenig - 1694 Fairview Rd., Lawrenceburg, KY 40342; 502-604-1420; digger@wmbinc.com and Steve Hess - 517 Leicester Cr., Louisville, KY 40222; hess_s@bellsouth.net

Special Projects: Chair - Zeb Weese (see p. 2)
Members - Tara Littlefield (see p. 2),
Mary Carol Cooper -
#1 Game Farm Rd., Frankfort, KY, 40601; 502-564-5280; marycarolcooper@insightbb.com

Fieldtrips: Chair - Patricia Haragan (see p. 2)
Member - Steve Hess (see above)

Communications: Chair - Amy McIntosh (see p. 2)

Grants: Chair - David Taylor - USDA-Forest Service, 1700 Bypass Rd., Winchester, KY, 40391; 859-745-



KNPS FALL CONFERENCE 2008

November 14th and 15th
Mammoth Cave National Park

SPEAKERS:

Mr. Randy Seymour, author of *WILDFLOWERS OF MAMMOTH CAVE NATIONAL PARK*.

Dr. Dwayne Estes, botanist, Austin Peay State University and Curator of the Herbarium

SATURDAY HIKES:

10-noon, winter tree ID, with Alan Nations
2-5 pm, Barrens Habitats and Rare Species, with Dwayne Estes.

For more information see page 5.

Election of the KNPS Board and Officers takes place at the Annual Fall Meeting.

New nominations

President: Alan Nations, *new*

VP: Pat Haragan, *continuing*

Treasurer: Amy McIntosh, *new*

Secretary: Amanda McKinney, *continuing*

Directors: Brian Gasdorf (*new*), Sarah Hall (*new*),
Steve Sensenig (*new*), Zeb Weese
(*continuing*).

For other native-plant events see pages 8 & 9.

SEE PAGE 2 FOR CONTACT INFORMATION.

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POST OFFICE USE ONLY.)*

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