Kentucky Naturalist News

Official Newsletter of the Kentucky Society of Natural History

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FROM THE PRESIDENT

I want to thank Jeff Foster for his great work as State President of KSNH for the last two years. He has worked hard to provide great conferences and maintain the goals of KSNH. As the incoming president I will strive to serve our members to the best of my ability. I plan to make our Spring and Fall Conferences entertaining, informative, and accessible to all. I look forward to the challenges ahead and working with key members to maintain and encourage growth in KSNH. I turn the Falls of the Ohio chapter over to Wayne Kimbel who has new and exciting ideas to promote our wonderful organization. I know he will serve with distinction and make a great chapter president. Please continue to support Wayne and me as we keep KSNH development a top priority. Our Spring conference agenda to the Great Smoky Mountains is on our website. Please get your rooms reserved now. We have several KSNH members who are willing to share a ride to the conference for those not able to drive themselves. The agenda has motor tours/trips each day and those who can't drive will not have a problem car pooling to easily accessible sites/events. Looking forward to 2014.

Happy New Year to all!

Chris Bidwell

Photos by Dave Luzader

Nature Notes:

The extreme cold weather this winter might give us some reprieve from exotic pest. Some insects cannot cope with extreme cold temperatures. One small blurb I read recently said the Emerald Ash Borer larvae might die from the recent extreme cold.
Emerald ash borer (EAB), Agrilus planipennis, attacks only ash trees. It was introduced into Michigan 15 to 20 years ago on wood packing material from Asia. Since then, the destructive insect has been found in numerous states including Tennessee. Typically, the emerald ash borer beetles can kill an ash tree within three years of the initial infestation.

We welcome Nancy Lawler, who joined when she attended our last Fall Conference at Shawnee, Ohio. Ms. Lawler is from Baltimore, Maryland.

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Meets every third Thrusday of each month except Jan, Jul, Aug & Dec at the Louisville Nature Center, 3745 Illinois Ave. Chapter President: Wayne Kimbel Email: waykim1@twc.com

"As the afternoon wore on, we seemed more and more transported in a kind of Crystal Age. Everything around us had become smooth and unmarred, clean and shining, hard and transparent. We moved through a realm of cold and lifeless
beauty. A breeze sprang up, but the dry music of the winter grasses was stilled. We heard when we paused-and then only rarely-the small tinkling sounds of the striking ice.
The beauty of a glaze storm is almost exclusively visual beauty. But that beauty has endless variety. Like specimens preserved in colorless amber, each weed head was displayed within
the envelope of ice. A teasel became a crystalline work of art and all the woven fences bordering pasture fields were converted into gleaming meshes of ice and wire. Under a line of locust trees, every branch shining with its glinting burden, an embankment fell away in a steep descent. From top to bottom, it was clothed with wild honeysuckle
vines. All the intertwining stems and tendrils were enveloped in ice. The picture presented suggested some tumbling waterfall, its airy grace stilled by cold in the midst of its descent.
A little later, we passed a cornfield where all the stalks lay prostrate, each yellow line visible through its coating of ice."

From: "Wandering Through Winter" by Edwin Way Teale,
Dodd, Mead, and Company, 1965

Great Smoky Mountains

Spring Conference April 10 - 13, 2014

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Starting a Fringe Movement

This is perhaps the first anti-promotional piece for the KSNH newsletter. What's an anti-promotional article? Well, it's the opposite of a promotional one, right? My purpose is to speak out against a very common and popular part of our spring landscape that has been promoted and sold by nurseries to happy homeowners and builders for many years. It has delighted suburbanites for a long time who perhaps get a rush of hormonal pleasure with this showy white bloom along monotonous subdivision roadways. It most likely evokes a mental " Ahhh…spring has finally arrived" at the end of our gray and dreary Midwest winters. It is indeed attractive, reasonably priced and fast growing. Never mind that it's non-native, invasive, short lived, and subject to limb breakage (Translation=bad choice).

By now you've probably already figured out that I'm referring to the Bradford Pear (Pyrus calleryana).

It's become such a ubiquitous part of our landscape that it is almost a default planting in front yards in our area. Although KSNH is not a large body, I would like its members to be on the forefront of a new wave of change in our communities. I make no pretense of being impartial or unbiased here. The message I wish to impart is to banish this tree and replace it with native stock. One that I want to hone in on here is the White Fringe Tree (Chionanthus virginicus). Now, I'm not going to go into all the botanical nuances of why this is a great substitute, however just know that it is A) Native B) Sturdy, and C) Suitable for small to medium sized residential lots. The White Fringe Tree is in the Olive Family (Oleaceae) that includes Forsythia, Privet, Ash, and Lilac. Its name originates from the Greek Chion (snow) anthus (flower) and is sometimes referred to by common names like Old Man's Beard and Grancy Greybeard. When you see it in bloom, those monikers make sense. In terms of my own backyard, it really is the "Goldilocks" tree; not too big or small, but just right. It grows to a maximum of about 30 feet, is tolerant to pollution and limb breakage, and is moderately drought tolerant. Another positive is that it has no thorns. Now, it is a bit slow growing; 6" to 10" annually, but to me that's a good thing. It will tolerate temperatures down to -30 degrees (Zone 4 to 9) and will do well in shade or full sun. The fruit bearing female is good for attracting birds, however, the male is showier. This native tree hits its full bloom glory just as the Dogwoods are fading, which is a good signal for the end of spring and the onset of summer.

What I enjoy are its leaves which are simple, obovate-oblong, opposite, and about 4" to 8" in length. They really are attractive and distinctive looking with their glossy surface. They also turn to an attractive yellow-brownish color in the fall. However, the showy white flowering petals or panicles are the real draw for this tree. They hang down about 6 to 8 inches and shimmer like a cloud. In addition, they create a pleasant fragrance; rather like a Lilac shrub. They are pollinated by insects.

The light brown bark was used by Native Americans to treat sores. It has been shown to contain phytochemicals that can increase resistance to TB, malaria, along with diabetes, and can be a tonic for digestive ailments. So, it shows versatility, sort of like a Swiss Army knife. Although neither threatened nor endangered, except in Ohio, it is not a common sight in the wild. This is partially due to its blooming late after other trees leaf out, which makes it hard to spot. It can be found in uplands woods but primarily along stream banks and prefers moist, acidic soils.

This native tree was introduced to England by John Bartram (1699-1777) a personal friend of Benjamin Franklin. It was one of his favorites, which says a lot since he was a big time plant collector and somewhat of an elitist of his time.

Ok, now there are just a few negatives. First, it is often hard to find in nurseries. The general public wants fast growing stock, which doesn't fit the description of this species. Native plant folks are willing to devote time with it, but others not so much. It is difficult to propagate, so buyers will have to purchase stock mature enough to transplant. No, you won't find it at Wal-Mart or Meijer garden sections. Also, it is sensitive to plants that are alleopathic such as the Walnut Tree, so location can be important.

A large amount of information is available on this species on Wikipedia. I'm not going to drone on with endless facts; just look it up. One word of caution, don't confuse this tree for the non-native Chinese Fringe Tree (Chionanthus retusus) or Chinese Fringe Flower (Loropetalum chinense).

Be a good shopper.

If, for some reason, you or someone needs a replacement for a Bradford Pear and the White Fringe Tree is either unavailable or unappealing, try one of the following: Serviceberry (Amelanchier) Dogwood (Cornus florida, Redbud (Royal White) (Cercis canadensis), or Yoshino Cherry (Prunus x yedoensis).

The Cherry isn't native, but it was the one given to the USA by Japan and graces our Nation's Capital, which is cool. Also, it isn't invasive.

So, KSNH members, please steer friends, family, and yourself away from the invasive Bradford Pear and toward trees like the White Fringe Tree. You will be doing everyone and the natural world a big favor. Who knows? This could become a Fringe movement spawned by KSNH that could spread and help make our natural world a wee bit better. --- Happy Trails Wayne Kimbel

The Year the Monarch Didn't Appear

By JIM ROBBINS
Published: November 22, 2013

On the first of November, when Mexicans celebrate a holiday called the Day of the Dead, some also celebrate the millions of monarch butterflies that, without fail, fly to the mountainous fir forests of central Mexico on that day. They are believed to be souls of the dead, returned.

This year, for or the first time in memory, the monarch butterflies didn't come, at least not on the Day of the Dead. They began to straggle in a week later than usual, in record-low numbers. Last year's low of 60 million now seems great compared with the fewer than three million that have shown up so far this year. Some experts fear that the spectacular migration could be near collapse.

"It does not look good," said Lincoln P. Brower, a monarch expert at Sweet Briar College.

It is only the latest bad news about the dramatic decline of insect populations.

Another insect in serious trouble is the wild bee, which has thousands of species. Nicotine-based pesticides called neonicotinoids are implicated in their decline, but even if they were no longer used, experts say, bees, monarchs and many other species of insect would still be in serious trouble.

That's because of another major factor that has not been widely recognized: the precipitous loss of native vegetation across the United States.

"There's no question that the loss of habitat is huge," said Douglas Tallamy, a professor of entomology at the University of Delaware, who has long warned of the perils of disappearing insects. "We notice the monarch and bees because they are iconic insects," he said. "But what do you think is happening to everything else?"

A big part of it is the way the United States farms. As the price of corn has soared in recent years, driven by federal subsidies for biofuels, farmers have expanded their fields. That has meant plowing every scrap of earth that can grow a corn plant, including millions of acres of land once reserved in a federal program for conservation purposes.

Another major cause is farming with Roundup, a herbicide that kills virtually all plants except crops that are genetically modified to survive it.

As a result, millions of acres of native plants, especially milkweed, an important source of nectar for many species, and vital for monarch butterfly larvae, have been wiped out. Onestudy showed that Iowa has lost almost 60 percent of its milkweed, and another found 90 percent was gone. "The agricultural landscape has been sterilized," said Dr. Brower.

The loss of bugs is no small matter. Insects help stitch together the web of life with essential services, breaking plants down into organic matter, for example, and dispersing seeds. They are a prime source of food for birds. Critically, some 80 percent of our food crops are pollinated by insects, primarily the 4,000 or so species of the flying dust mops called bees. "All of them are in trouble," said Marla Spivak, a professor of apiculture at the University of Minnesota.

Farm fields are not the only problem. Around the world people have replaced diverse natural habitat with the biological deserts that are roads, parking lots and bluegrass lawns. Meanwhile, the plants people choose for their yards are appealing for showy colors or shapes, not for their ecological role. Studies show that native oak trees in the mid-Atlantic states host as many as 537 species of caterpillars, which are important food for birds and other insects. Willows come in second with 456 species. Ginkgo, on the other hand, which is not native, supports three species, and zelkova, an exotic plant used to replace elm trees that died from disease, supports none. So the shelves are nearly bare for bugs and birds.

Native trees are not only grocery stores, but insect pharmacies as well. Trees and other plants have beneficial chemicals essential to the health of bugs. Some monarchs, when afflicted with parasites, seek out more toxic types of milkweed because they kill the parasites. Bees use medicinal resins from aspen and willow trees that are antifungal, antimicrobial and antiviral, to line their nests and to fight infection and diseases. "Bees scrape off the resins from the leaves, which is kind of awesome, stick them on their back legs and take them home," said Dr. Spivak.

Besides pesticides and lack of habitat, the other big problem bees face is disease. But these problems are not separate. "Say you have a bee with viruses," and they are run-down, Dr. Spivak said. "And they are in a food desert and have to fly a long distance, and when you find food it has complicated neurotoxins and the immune system just goes 'uh-uh.' Or they become disoriented and can't find their way home. It's too many stressors all at once."

There are numerous organizations and individuals dedicated to rebuilding native plant communities one sterile lawn and farm field at a time. Dr. Tallamy, a longtime evangelizer for native plants, and the author of one of the movement's manuals, "Bringing Nature Home," says it's a cause everyone with a garden or yard can serve. And he says support for it needs to develop quickly to slow down the worsening crisis in biodiversity.

When the Florida Department of Transportation last year mowed down roadside wildflowers where monarch butterflies fed on their epic migratory journey, "there was a huge outcry," said Eleanor Dietrich, a wildflower activist in Florida. So much so, transportation officials created a new policy that left critical insect habitat unmowed.

That means reversing the hegemony of chemically green lawns. "If you've got just lawn grass, you've got nothing," said Mace Vaughan of the Xerces Society, a leading organization in insect conservation. "But as soon as you create a front yard wildflower meadow you go from an occasional honeybee to a lawn that might be full of 20 or 30 species of bees and butterflies and monarchs."

First and foremost, said Dr. Tallamy, a home for bugs is a matter of food security. "If the bees were to truly disappear, we would lose 80 percent of the plants," he said. "That is not an option. That's a huge problem for mankind."

Jim Robbins is a frequent contributor to The New York Times and the author of "The Man Who Planted Trees."

Thanks go to the generous members who donated to our Grant/Scholarship fund during 2013. Your money will be used to help fund our scholarship awards in 2014.

A little reminder that we still have $50 in the Allen Lake Memorial Scholarship Fund from which $500 was awarded in 2012. If you wish to donate to this specific fund, please make a note of it when you send in your donation. Otherwise, donations will be used for general scholarship awards.

The Kentucky Society of Natural History is organized under section 502(c) (3) nonprofit tax exempt section of the Internal Revenue Code. As such, donations are tax deductible to the fullest extent permitted by law. Please send any donations to KSNH, Post Office Box 883, Fairdale, Kentucky 40118.

Your membership dues for the Kentucky Society of Natural History are due in January, unless you are a new member and joined in October or after. Please keep in mind that a portion of these dues is used to fund our grant program for students in Kentucky universities. Your membership is critical in preserving our mission. We appreciate your past support and hope that you will again decide to renew your membership. If you are a Falls of the Ohio Chapter member you should have received a reminder from Treasurer Cindy Payne.

We have been able to keep our dues low because of our e-newsletters. Please provide a current email address. **Your email is important to us** in order to keep you current on important information regarding the Society. If you have any questions, feel free to contact me by email at treasurer@ksnh.org or by phone (502)368-4378.

Dues are as follows:

Family	$25	Individual	$15
Full-time student	$7.50	Life:	$300

There is a mail-in form on the website. You may also go to www.ksnh.org, and pay your dues using PayPal or your own credit card. You may also send a check to KY Society of Natural History, P.O. Box 883, Fairdale, KY 40118-0883. You may also choose to pay at a chapter meeting. Please make your check payable to KSNH, and mail to P.O. Box 883, Fairdale, KY 40118.

2013 Financial Statement
Kentucky Society of Natural History

Income

Pine Mountain SRP Spring Conference registrations	1,160.00
Pine Mountain SRP Spring Lodging prepaid	3,534.00
Shawnee Ohio Fall Conference registrations	1,385.00
Smoky Mountain Spring Conference registrations	
Grant/Scholarship Donations	390.00
Merchandise	230.00
Falls of the Ohio Membership Dues	502.44
Falls of the Ohio Membership Dues (paypal)	150.00
State Dues	50.00
State Dues (paypal)	162.50

Total Receipts 7,563.94

Expenses

Grants-KSNH General (4 @ $500 each)	2,000.00	
Grants-Bernadine Meyer-2 ($500 + $700)	1,200.00	
Postage	52.06	
Printing (newsletters)	119.01	
Door Prizes	86.57	
Office Supplies	68.28	
paypal fees (state)	6.58	
Lincoln Memorial Museum-18 members@3.50-spring conference	63.00	
Refund-Miller cancellation-spring conference	247.00	
Refund-Stahlgren cancellation-spring conference	222.00	
1. Pine Mountain State Resort Park-Spring 2013 lodging	3,024.45	
Pine Mountain State Resort Park-Spring 2013 lodging (Bidwells)		180.28 (lodge error)
2013 Naturalist of the Year Award	125.00	
Shawnee Lodge & Conference Center-deposit	500.00	
Shawnee Fall Conference-parking at Serpent Mound	42.00	
Shawnee Fall Conference-30 dinners-OVCTC Rest. Mgmt.	300.00	
Shawnee Fall Conference-coffee	6.89	
Post Office Box Rental-Fairdale-annual	40.00	
The University Press of KY-Pat Haragan's book	500.00	
Kentucky Farm Bureau Insurance-2014 liability policy	364.59	

Total Expenses 9,147.71

Jefferson County Federal Credit Union		interest ytd
Certificate #1-12 month-12/5/14	4,047.52	18.02
Certificate #3-12 month-1/10/14	7,484.84	34.05
Certificate #4-12 month-5/4/14	3,286.30	15.32
Certificate #6-6 month-1/10/14	7,544.77	11.73
Total $ in cd's	22,363.43	
JCFCU-Checking	2,247.55	6.78
JCFCU-Savings	5,236.64	4.44
	7,484.19	

Patricia E. Meyer, KSNH State Treasurer
3-Jan-14

Continued from the Fall newsletter

THE LEGEND OF ELEVEN JONES

Robert Barry's 1913 article refers to a "'shack'" on a hill overlooking the cave. This farm house, dilapidated by 1913, was an ideal site for a farmstead since it had a nearby spring (Eleven Jones' Cave) that ran all year round. Good perennial springs in the Louisville area were very hard to find unless one were to look to the east and to the north of Louisville where geologic conditions favor the occurrence of springs. It would be foolish for a farmer to disregard this place for one on which he might have to dig a hard-rock well. During the hunting season of 1912, a hunting dog went into the cave and it was said that it never returned to the surface. Possibly this is the basis for the story of people finding human bones in the cave. Our investigation of the cave uncovered no bones whatsoever.

There are six acceptable names for the cave, all are derived from a common ancestor. The name, Eleven Jones' Cave, has persisted from before 1848, but not before 1822; then there is the contraction, 'leven Jones, which was used as early as 1913 and possibly before that, although there is no written record of it. A twist in the name occurred in 1948 -- Leben Jones' Cave, then Leven Jones in 1949. The name in rather common use today is Eleven Jones Brothers Cave; one of the last variations is Lebanon Jones' Cave. Legend relates that years ago the entrance was big enough to drive a horse and carriage through! If this be true, then the entrance – surrounded by solid rock - has shrunk to a height of 4.5 feet and a width of 2.5 feet. Or, the spring entrance now in use as Eleven Jones' Cave is not the real entrance at all. An entrance big enough to accommodate a horse and carriage would have to be about six feet tall and five feet wide. This size entrance is not easily obscured by slumping overburden, nor would its geographic location be easily forgotten by the people of Germantown.

What makes the legend much more intriguing is that over the years eight entrances are said to have been found at one time or another; all are said to connect with the spring cave on Beargrass Creek. There is the Eleven Jones' Cave spring entrance on Beargrass Creek. Around the turn of the century, two enterable openings were reported 100 feet and 900 feet upstream from the main spring entrance. Other entrances reported have been at Seventh Street, a quarry entrance in Louisville Cemetery, a cave in St. Michael's Cemetery, a cave on the side of Fort Hill (Preston Street exit), and one on Frankfort Avenue.

What is the possibility of the caves above connecting with Eleven Jones' Cave? The only cave in existence today connecting directly to the main cave is the spring on the west side of Beargrass Creek south of Eastern Parkway. Other openings are said to have been entered on the same side of the creek. There is a spring seepage 100 feet upstream from Eleven Jones' Cave that could possibly have been an entrance, but the author did not find any evidence of solution action that would indicate a cave entrance. In this vicinity, Beargrass Creek has been deepened, railings from the dredging operations have built up and formed a levee between the seepage spring and the hill side slope. The spring issues from beneath a three-foot high rock ledge (Louisville Limestone). The elevation of the spring discharge is about the same as that of the main cave spring. The affluence from this small seepage spring has formed a swampy area and there is no sign of an entrance. The cave supposedly located 900 feet upstream from Eleven Jones' Cave was field checked, but none could be found.

Mrs. Charles (Ann) Plamp relates that when she was a little girl (circa 1939) she used to venture back into a cave located in the rock quarry, 800 feet north of the spring entrance. This quarry was also field checked in 1967, but the caretaker of the Louisville Cemetery said that there was never an entrance there. Investigation of the quarry revealed that if there were an entrance it has since been sealed by a concrete block wall, in front of which stood a chicken coop. There is, however, a spring seep at the base of the free face in the quarry forming a small pond on the quarry floor. The water seeps back into the rock face on the other side of the quarry. This quarry is about 80 feet in diameter and 13 feet high on one end. The pond is from one to four feet deep; this water level approximately corresponds with that of the two other springs in the area.

There are many stories of people entering the cave spring entrance and subsequently emerging from a cave elsewhere in the city - especially caves on the east side of Beargrass Creek. If these stories are true then scuba equipment must have existed around the turn of the century! For a human to connect the spring cave with, for instance, the Fort Hill Cave, he would have to cross under the water table, which at that time was unquestionably higher than it is today (by 12 feet at least). This one physical limitation deters the author from considering the Frankfort Avenue entrance and the Fort Hill entrance at the Preston Street exit as connecting with the spring cave. The Fort Hill opening poses several problems because many people insist that the cave there on the hill does connect with Eleven Jones' Cave. This cave has been covered up for years but a cave of sorts did exist there. Mr. Maurice C. Fuller, who is 76 and came to Louisville in 1918, says that he saw the cave and that it did not go

back into the hill very far. He relates that the "cave was made in that yellow sand" that is so prevalent in the Fort Hill section. This "sand" is actually loess, an aoeloian deposit, blown there during one of the inter-glacial phases during the Pleistocene epoch. Kids even today are always digging into the hillside and making their own "caves" since the loess will hold up very well and will resist collapse because of the interconnecting nature of the jagged grains of dust. The Seventh Street entrance is equally out of the question since its location is also geologically unfavorable to the occurrence of caves -- the sand and gravel glacial outwash material of the Ohio River. Caves in general do not develop in unconsolidated glacial material.
The years between 1913 and 1948 were quiet ones so far as the history and legends surrounding the Eleven Jones' Cave. _Between 1880 and 1936 a dairy was situated across from the cave on Beargrass Creek. This dairy was started by Fred Sehurch in 1880, and by 1887 he had expanded his pasture land to encompass the acreage around the cave spring. Sehurch, a Swiss migrant, died in 1927 at the age of 79. After some litigation his will was finally executed in May of 1931, transferring the land along the creek and the cave to the Louisville Sewage Commission.

Stories about the Eleven Jones' Cave began to resurface in 1948. In fact, 1948-49 proved to be the most fruitful years for the cave with its myths in the news media. William J. Sprau, capitalizing on Edwin Finch's offer for Kentucky folk tales and trivia, printed a letter (dated 1948) which revived the legend. Sprau testified that there were 11 brothers of which the last born was named (ironically) Eleven Jones.

He said, "... at one time a fine stream of water, flowed from the cave. and the area was a popular recreation and fishing spot." Today the waters of Beargrass Creek are so polluted in this vicinity as to make fish life almost impossible. As for the recreational side of the story, the cave entrance site still plays host to many amorous adventures.

Sprau revived the persistent legend of the iron (doors) gates located somewhere in the innermost recesses of the cave. In 1956 Robert Stussie reported that he went back to the Fourth Turn and found iron bars spaced so close together that he could not get through. The bars were three inches in circumference. Kenneth A. Alderson upon hearing of the above exploit, accompanied by Michael Cunningham, went into the cave armed with a hack saw. After the Fifth Turn had been negotiated and still no gates or iron bars had materialized, the two spelunkers returned to the entrance. On September 8, 1971 the Milton Metz Radio listener participation program had as its subject "Cave Exploration." One of the persons who called the station said exactly the same thing as had Stussie. Sprau added a new twist to the legend when he said that above the two iron gates there was fastened a beer keg. He said that this story dated back to 1872 when he had been a lad. The beer keg, although new to the legend, does seem to have a German ethnic overtone.

Beer, beer kegs, beer lest -- all are typical of the German culture transported to Louisville from Germany. Sprau, while adventuring with three other lads near the cave spring entrance, found what they thought was another cave entrance, 100 feet away from the main entrance. "Poking with a fence rail, they uncovered a nest of 16 water moccasins."

The unearthing of a pre-Civil War Army sword in the cave by eight year-old Robert L. Reeves in September of 1949 may give some authenticity to the shrouded legend of a saber. The sword was described as follows: "The heavy bronze 'fish scale' hilt of the sword bears an American eagle of old design on each side. Its broad two-edge steel blade, originally 24 inches long, has a heavy covering of rust and the point is gone." Walter H. Kelly, an authority on guns and swords, identified the weapon as a sidearm used by artillery soldiers "from 1830 up to the time of the War Between the States." The identification was made possible by means of etched initials in the hand guard of the sword; the initials were "W.A.T.," which according to Kelly belonged to the Inspector of Arms for the US Army, Colonel William A. Thornton.

Colonel Lucien Beckner, then Curator of the Louisville Museum, substantiated Kelly's deductions. Colonel Beckner went on to say, "The boys have found a valuable trophy." If the sword had been used by one of the Jones brothers, said the Times article, then it would "... indicate that at least one of the band may have served in the US Army." Or, the Jones gang used the sword to cut the throats of some of their robbery victims. The article went on to suggest that the Joneses were Army deserters, or that billeted soldiers in the area had discarded or lost the sword around the time of the Civil War.

This sword could have been placed in the cave any time from 1830 to just within a few years before young Reeves excavated it from the cave. The buried position of the sword in the cave may shed some light on the mystery. "The sword was found submerged in mud and water in a recess off of the main passage of the cave. The location of this section of the cave is 50 feet from the entrance at the First Turn. The hiding place is the extension of the

main entrance, now filled nearly to the ceiling with cave fill. In this section of the cave the twilight zone offers enough light so that one can move around, once one's eyes become accustomed to the subdued light from the entrance.
As a result of this researcher's inquiry printed in the "Letters to the Editor's column" of the Courier-Journal and Times Magazine, June 10, 1973, two additional sword stories surfaced. An ivory handled, 36-inch long sword was claimed to have been found in the cave circa 1962 by Gene Shircliff and his two cousins, Steve and Greg Shircliff. One of the ivory handgrips is purported to have been broken off. Gene Shircliff said that he found the sword far back in the cave on a shelf, on the right wall. Dirt had been pushed over the sword to hide it from view. Gene said that the sword now is in the possession of Steve Shircliff who lives in Rolla, North Carolina.

Another sword legend, supposedly based upon an old newspaper article, holds that a boy was found in front of the mouth of the cave in a state of shock. In his hand he held a sword -- the handgrip was studded with jewels. He was taken to a hospital for treatment, and when asked where he found the sword, he replied, "If I told you, you would
not believe me."

Many legends are based upon some physical event which actually took place, but which later became shrouded in mystery and embellished to fill in gaps which had evaded the storyteller. This was the fate of the Eleven Jones Cave. We know that one bona fide sword was found in the cave in 1949, but who placed it in the cave, when, and for what purpose have eluded this researcher since 1965. On June 4, 1973, at the conclusion of the formal public presentation of this paper to The Filson Club, Miss M. M. Wyman stated that her brother, George, could provide much needed insight into the actual origin of the sword in the cave.

George Wyman recounted the following childhood adventure in the Eleven Jones Cave. In July 1910, George (then 12 years old) with three other lads, Lonnie Osborne, Wilton Dohrman, and Jesse Reynolds, went into the cave in search of the legendary iron gates. Even then the cave was said to conceal a treasure of gold and had a strong reputation as a hideout for bandits -- the Eleven Jones Gang. For protection the boys went spelunking well fortified: Wyman armed himself with a gum-ball shooter; Osborne carried his grandfather's sword, taken from his home where it was displayed on a wall; one of the other boys had a B-B gun.

Well protected, and with caution, they ventured forth into the unknown depths of the cave -- ready to meet any adversary on equal grounds. Somewhere back in the cave their lantern went out (carbon dioxide build-up?). Startled they turned around and groped their way out of the cave in pitch darkness. Almost simultaneously, an electrical storm commenced outside the cave. The noise from the thunder was so loud it produced resounding echoes throughout the interior of the cave, and added much to the youngsters' already frightened state. This induced an even more hasty retreat -- young Osborne dropped his grandfather's sword somewhere in the cave. For sometime after this incident, Lonnie Osborne tried to organize another party of cave explorers to retrieve the prize sword but found no takers. George Wyman was asked if he could describe the physical characteristics of the sword. The only thing that he could remember was that the sword had a shiny point. The sword found in 1949 by Robert L. Reeves had a broken point. This sword may have been damaged in the cave during the boys' hasty retreat during the thunder storm. The saber legend grew and the sword that was found in 1949 is now being attributed to Confederate operations in this area. Other artifacts reportedly have been unearthed in this same section of the cave. Christopher Gray told this author about a pistol which had been found in the cave. The pistol, like the sword, was rusty with age and the action was missing. There are other unsubstantiated stories about brass buttons of Civil War issue being found in the cave. In short, the main entrance passage of the cave makes a splendid hiding place for all sorts of things. The author found a transistor radio in the room between Turn Three and Four.

In September 1949, Stewart Taylor, in a letter to the Louisville Times Editor, relates another version of the cave legend. He tells of the old Fort Hill cave entrance to Eleven Jones' Cave. He says that the Joneses lived during the latter part of the 19th century (1890), and that the sword belonged to "... guerrilla band in the country around. Likely this cave on Beargrass Creek was a hiding place of fugitive members...Louisville during the war also harbored many escaped prisoners." Taylor was in disagreement as to the true identity of the Joneses. He said that they lived on Fort Hill between the bottom of the hill and the L&N railroad tracks, and that their dwelling had been a general store -- a two-story frame building, which by the 1890's had become weather-beaten. Taylor insists that the name "Leven" is the correct spelling for the name. Presumably several of the Joneses sons, "... crawled into a cave-like hole in that escarpment on which the Old Fort was built, and kept on going until they emerged from an opening on the bank of Beargrass Creek." He does admit that the story does sound like "... a tale of youthful adventure. '' An Eleven Jones' Cave story with a different twist was reported in 1965. Two teen-

age boys, Christopher Riley, 15, and his brother Thomas, 16, on April 16, 1965 went into the vicinity of the cave on an "exploring expedition" (according to their mother, Mrs. Thomas Riley). The boys did not return home, so a search party was organized to look for them. Articles of their clothing were identified by the mother -- which were found near the entrance to the cave. WHAS Television News carried film clips of the cave and the search parties of Boy Scouts looking for the missing boys. The Louisville Police made a 45-minute search inside the cave. The Boy Scouts also sent a Scout to check out the interior of the cave. On the evening of April 18,1965, The Under Water, Under Ground Rescue Association made a search of the cave. On April 19 the boys were located near St. Louis, Missouri. They had hitchhiked all the way, and were found living in an abandoned cabin in a wooded section near a Passionist Seminary in Warrenton, Missouri, near St. Louis. Perhaps one of the newer cave stories, about 1964, is the one about a skeleton hand protruding from one of the walls inside the cave. This is somewhat fantastic, when coupled with the fact that the Louisville Cemetery is above the cave. As to skeletons being found inside the cave, there just might be some truth in it after all. Around 1964, students at Highland Junior High School brought human bones taken from the cave to their 7th Grade science teacher Virginia Boebinger. In the Fall of 1971, this author found that approximately 50% of the 7th Grade science classes at Highland Junior High knew about the location of Eleven Jones' Cave, and even about the assortment of legends attributed to the cave.All through the years the legend has been retold of the Eleven Jones' Cave and its compliment of dastardly deeds and strange disappearances, most of which have been based upon hearsay. Joe Creason in one of his articles wrote that the Joneses were pirates. However, he was actually extending his literary license and by his own admission had no real evidence to justify his statement.

PHYSICAL DESCRIPTION OF THE CAVE

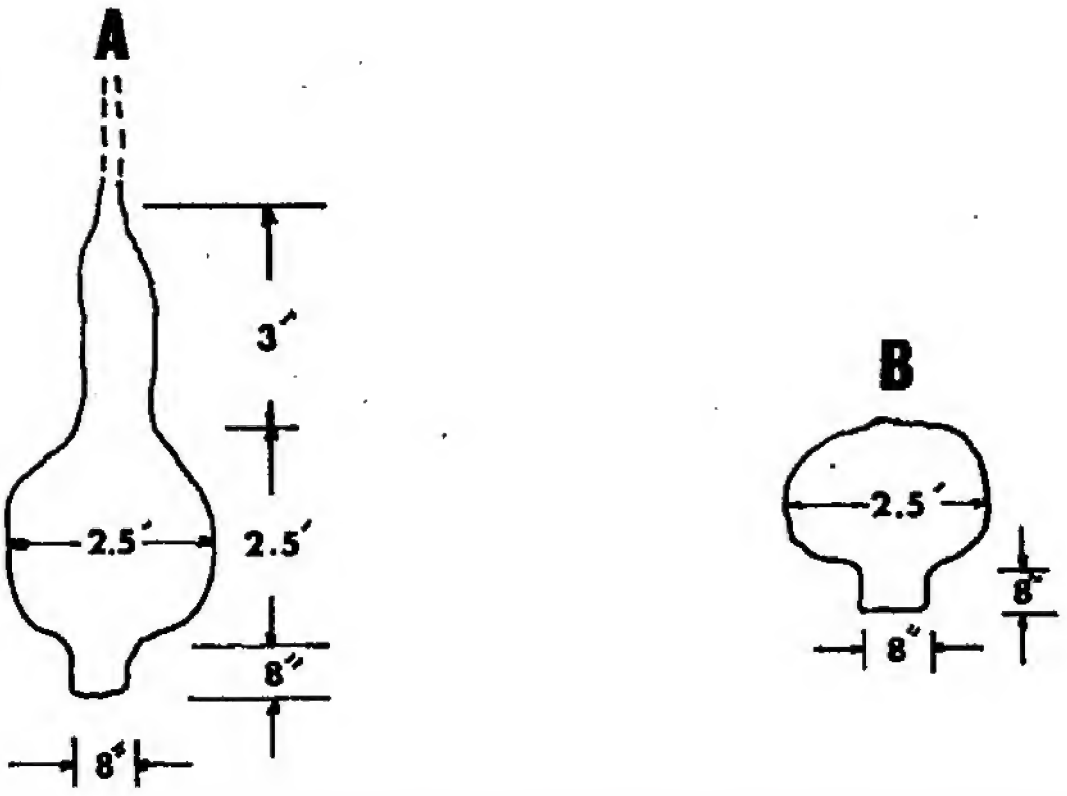
The entrance to the cave is a stoop way passage 2.5 feet wide, 4.5 feet high, and 40 feet long. The entrance passage intersects the First Turn leading off to the right. The main entrance passage extends for another 25 feet which terminates in a small room. The passage between the First and Second Turn is a 90-foot long tubular crawlway intersected by a narrow canyon passage 4 to 5 feet high. Next a 25- foot long sewer-type tubular passage connects the Second Turn with the Third Turn. Between Turn Three and Four, a composite tube and canyon passage predominates; half way through this segment a small room large enough to stand erect in is encountered. The length of this section is 50 feet. The cave then starts to take on a different character in that between Turn Four and Five the passage is almost a 100-foot long stoop way, containing the only sizable piece of breakdown in the whole cave. Extending to the left from Turn Five is a crawlway into another sewer-type passage for 50 feet. After the Sixth Turn, there are several smaller sharp bends in the passage. The cave extends past the Eighth Turn, but no cave survey has progressed beyond that point. A flee-flowing stream traverses the entire length of the cave. Eleven Jones' Cave is essentially a joint determined passage with a main narrow vertical joint which has intersected a horizontal tube passage.

This cave closely resembles Bretz's network pattern, in which he ascribes speleogenesis by solution along controlling joint traces in completely saturated carbonate rocks. Once the ground water flow was established, one joint compliment developed faster than the rest. Observation revealed that most side passages have undergone little solutional development. At each passage junction of two joint sets, a small room has formed at the intersection. This is very prominent at the Second and Fourth Turns, but is represented at every junction on a minor scale.
The intrenchment of the South Fork of Beargrass Creek during Pleistocene times perhaps was influential in the development of a vadose trench cut into the floor throughout the length of the cave. At the entrance the trench is 12 inches wide, but a little past the Fourth Turn its dimensions decrease to 8 inches by 8 inches. Genesis of this trench could be ascribed to a rapid lowering of local base level within the cave. The passage encountered after the Second Turn is a key-way type, 2.5 feet in diameter -- this is a semi-eliptical passage (Fig. 1).

Two cave passage cross-sections in Eleven Jones' Cave. Section A is taken between the First and Second Turn, whereas Section B is between Turn Two and Three can be observed in the Grinstead Drive Quarry Cave. The quarry is also near Beargrass Creek. The free slope of the hill in which the cave is developed has been cut back 28 feet from the creek. Major erosional cutback has resulted from the meandering of Beargrass Creek. This meander plaining worked along the bedding plains of the Louisville Limestone, which is massively bedded in the vicinity of the entrance, but grading upward into a ground water shale zone has greatly facilitated erosional cutback. The upper part of the entrance has been stripped away leaving an enlarged trench 3 feet wide and 3 feet deep and tapering down toward the creek to 1 foot high and 3 feet wide. The whole configuration resembles a sluice box.

---------*to be continued in the Spring Newsletter.*

Fig. 1



Antarctic Emperor Penguins May Be Adapting to Warmer Temperatures

Jan. 9, 2014 — A new study of four Antarctic emperor penguin colonies suggest that unexpected breeding behavior may be a sign that the birds are adapting to environmental change.

Share This:

Analysis of satellite observations reveals that penguin colonies moved from their traditional breeding grounds during years when the thin layer of ice (sea ice) formed later than usual to the much thicker floating ice shelves that surround the continent.

Reporting this week in the online journal, PLOS ONE, a team of scientists from British Antarctic Survey (BAS), the Australian Antarctic Division and the Scripps Institution of Oceanography at UC San Diego in California, describe this extraordinary change in behavior.

Lead author, Peter Fretwell of BAS said, "These charismatic birds tend to breed on the sea ice because it gives them relatively easy access to waters where they hunt for food. Satellite observations captured of one colony in 2008, 2009 and 2010 show that the concentration of annual sea ice was dense enough to sustain a colony. But this was not the case in 2011 and 2012 when the sea ice did not form until a month after the breeding season began. During those years the birds moved up onto the neighboring floating ice shelf to raise their young.

"What's particularly surprising is that climbing up the sides of a floating ice shelf -- which at this site can be up to 30 meters high -- is a very difficult maneuver for emperor penguins. Whilst they are very agile swimmers they have often been thought of as clumsy out of the water."

The emperor penguins' reliance on sea ice as a breeding platform coupled with recent concern about changing patterns of sea ice has led to the species being designated as 'near threatened' by the IUCN red list. The discovery suggests the species may be capable of adapting their behavior.

In recent years satellite technology has significantly enhanced the scientists' ability to locate and monitor emperor penguin populations.

Barbara Wienecke of the Australian Antarctic Division said, "These new findings are an important step forward in helping us understand what the future may hold for these animals, however, we cannot assume that this behavior is widespread in other penguin populations. The ability of these four colonies to relocate to a different environment -- from sea ice to ice shelf -- in order to cope with local circumstances, was totally unexpected. We have yet to discover whether or not other species may also be adapting to changing environmental conditions."

Gerald Kooyman, of the Scripps Institution added: "Without satellite imagery these moves onto shelf ice would not have been detected. It is likely that there are other nuances of the emperor penguin environment that will be detected sooner through their behavior than by more conventional means of measuring environmental changes."

Whereas sea-ice is frozen salt water, ice shelves are made up of glacial ice that has flowed from the land onto the sea. At the outer edge of an ice shelf ice cliffs can form and these can be anything up to 60 meters high.

Story Source:
The above story is based on materials provided by British Antarctic Survey.
Note: Materials may be edited for content and length. For further information, please contact the source cited above.

Journal Reference:
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Note: If no author is given, the source is cited instead.

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Remember to visit our website often for the latest news and updates.

http://www.ksnh.org

Kentucky Naturalist News

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WORDS FROM THE PRESIDENT

I want to thank all for your participating in our Spring Conference in the Great Smoky Mountains. Our Fall Conference agenda will be posted in late April and hopefully it will be attractive to all ages and preferences. I'm excited about getting back to the Land Between the Lakes area, a beautiful part of Kentucky which is often forgotten. Keep spreading the word about KSNH and continue to make new members feel part of our family of nature lovers. Wayne Kimble and I are always open to suggestions that will attract new faces and return our veterans. As state president I am having a great time talking to speakers for our conferences and utilizing their skills and knowledge for these events. I'm open for any suggestions for our Natural Bridge and Mammoth Cave conferences in 2015. Hopefully Spring is here – although shortened- let's make every effort to enjoy the wonderful Kentuckiana trails!

Chris Bidwell

Trillium luteum Photo by Dave Luzader

Hepatica americana by Dave Luzader

Spring is a miraculous experience. The whole world comes alive after the winter in which it seemed that everything was dead. The world comes filled with color and the scent of delicious greenery. The world that seemed so dull and cold has come alive once again. Little did we know that beneath the cold hard ground the plants and trees were preparing for rebirth. Spring gives us hope for rejuvenation in our own lives as well. Spring is a time to renew the excitement and zest for life that lives inside.

Spring By Family Friend Poems / CC BY 3.0

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Meets every third Thrusday of each month except Jan, Jul, Aug & Dec at the Louisville Nature Center, 3745 Illinois Ave. Chapter President: Wayne Kimbel Email: waykim1@twc.com

Spring Conference 2014 – Smoky Mountains

The KSNH Smoky Mountain Spring Conference was attended by 39 folks who were treated to some of the best weather imaginable. There were very few glitches – considering poor phone service in the park. I had a great time getting this trip planned and serving our KSNH members. I cannot thank enough all who attended – you gave your time, knowledge and money to attend. From what I heard everyone was well satisfied. Thanks to all who led trips – Berl and a host of experts from the area – Pat Meyer for doing the Treasury, Margie Conard for being our Secretary, Cindy Payne for the door prizes, Wayne Kimble and John Gilkey for the KSNH pull-down exhibit and brochures, Dave Luzader for getting all the information out, and all who attended and participated in the Board meeting Saturday night. Everyone related some special sighting or an event on their excursions. Camaraderie abounded. Thanks to all who joined us for the first time and we are looking forward to seeing more of you at other KSNH functions. Thanks so much for everyone's participation, comments, and support.

Chris Bidwell, president KSNH

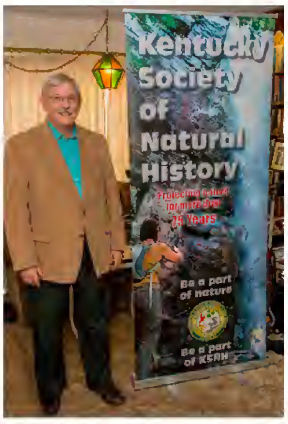
The main reason not to feed the bears

The winter that would not end

Sounds like the beginning of a bad science fiction story. However, when we speak of early 2014, we are pretty much just reciting the facts. You know you're in for it when they start using phrases like polar vortex. Who comes up with those phrases anyway? No matter, it's spring and time to kick old man winter to the curb.
Our activity year began on a slightly less than auspicious tone when we had to cancel the regular February meeting due to severe weather threats repeated over and over again on the airwaves. The actual outcome was not quite the Armageddon forecasted, however, erring on the side of safety will always rule the day with the Society. The Louisville Nature Center is a wonderful location for our meetings, but it does not have a storm shelter. Unfortunately, by cancelling the meeting, we missed the viewing of the DVD on the Smokies that Berl Meyer planned for us that evening. Thanks Berl for offering this up as a teaser to encourage members to join fellow members at the spring conference.
We had the pleasure of spending the February outing with the president of Botanica, Brian Voelker, and hearing about the plans for Louisville's Botanical Garden. Starting with a presentation at the Louisville Waterfront Corporation, Brian told the story of how the Garden's concept was developed and designed. Everyone in attendance was impressed with the effort and progress that has been made toward making this a reality. David Karem, president of the Corporation, was also there to comment on how valuable this Garden will be for Louisville's waterfront as well. It makes you realize the commitment that is necessary to transform an ugly duckling into a swan. The site is a reclaimed landfill and it will be quite extraordinary to see it slowly become a source of community pride. We certainly got to see it in the "before" stage. Native plantings will be a significant part of their program. If members want to learn more or become a member, please look at their web site http://waterfrontgardens.org/. It's a cause well worth supporting. Thanks Brian for sharing with us.
We slipped into March and winter continued to be tenacious. Early shoots of ephemerals were slow in poking their heads, unlike 2013 when they were peaking as early as I can ever remember. You can always expect the unexpected in nature. I chatted recently with Claude Stephens, a senior staff person at Bernheim, about his work for several years in tracking the timing of natural events and correlating them with temperature, precipitation, dates, and other data. This is called Phenology and he had some interesting facts and trends that were surprising to me. He is going to share this with us during his talk in November at the regular meeting. Be sure to catch that one.
We had a marvelous talk by Pat Haragan at our March meeting. Pat is the author of the newly released book "The Olmsted Parks of Louisville, A Botanical Field Guide". Of course, our own Chris Bidwell and Susan Wilson provided the photo work for this wonderful work. If you haven't picked up a copy, I would highly encourage you to do so. You'll want it to accompany you on every stroll through Louisville's parks. One of the key take away messages to me was that spending almost eight years from start to finish on this book was not a "stroll in the park" for her for sure. To quote Pat this was simply a "labor of love".

For the March field trip we had the pleasure of being with Pat and visiting a very popular part of Cherokee Park around Hogan's Fountain. She gave us specific details on what was found in key locations in that vicinity while we were able to identify very early blooming grasses. She was quick to point out the wonderful work done by the Olmsted Parks Conservancy in removing invasive species like bush honeysuckle and other efforts in habitat restoration. I especially enjoyed seeing the early budding of the Butternut Hickory we found along with the Yellow Buckeye. It was a chilly morning, but it was sure worth braving it to spend it with one of our area's most top-notched botanist. Thanks Pat for your time and talent.
At April's meeting we'll hear from Cassie Hauswald with the Nature Conservancy. She plans to give an overview of nature preserves near Louisville and their efforts to maintain and expand them. Many of these are very close to the city and worth the drive across the dreaded bridge. I've read some of her articles and she has a great passion that is contagious. The April outing is on a Sunday after (27th) where we'll visit a little known area, Lapping Park, in Clarksville, Indiana. Members will be very surprised that such a great natural place could exist so close to mundane suburbia. Once you discover it, you'll want to go back again and again.
At May's meeting, a friend of mine, Phil Tamplin, will be talking about his passion, Bluebirds. He has become a self-taught authority on this subject. Don't miss this one. How can anyone not love bluebirds?

We'll be visiting Foxhollow Farms with Phil for the outing where he'll share with us his work with bluebirds there. We'll also learn a bit about his unique farm and its good work in sustainability.



I want to give a big shout out to member John Gilkey for donating his photo and graphic skills for the Society's new brochure and display panel. Insert photo of John and display These will be used to help support promotional efforts to grow membership and build general public awareness of the Society. Pick up a few at the next meeting or outing and start spreading the word about our Society to your friends, neighbors, and co-workers. Invite them to a meeting and/or outing. You might light a fire with them that helps them and the Society. New eyes bring new vision and new minds bring new ideas.
Thanks for your support.

Happy Trails!

Wayne Kimbel

Photo by Wayne Kimbel

LARGE WHORLED POGONIA – Isotria verticillata (Raf.)

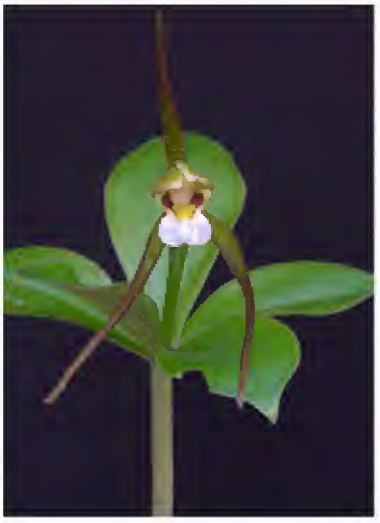


Photo by Chris Bidwell

A rare/infrequent native spring perennial orchid, the large whorled pogonia is found in dry, acidic, partly shaded oak/pine and hemlock woods of Eastern/Southeastern Kentucky. It may also be found in bogs/fens and is associated with mountain laurel and other heath family plants. Flowering occurs from April through May. Due to its green coloring, a smooth-slender stem with a height of usually under 12 inches, this orchid is often overlooked or accidentally trampled. A whorl of 5-6 leaves of 3 inches in length is present just below a single flower. The whorled leaves position and appearance can be described as a "jester's collar". Three narrow purplish-brown sepals are widely, uniformly separated and 3 yellow-green petals helps form the single (occasionally two) tubular flowers just above the leaves. The flower, 1-1/2 inches long, is purple streaked inside its opening with the flower petal ending with an extended 3/8-1/2 inch 3-lobed, slightly wavy labellum (lip). The open mouth corolla contains the stamens and pistil fused together in a column. This orchid has a faint vanilla scent.

The binomial name, Isotria verticillata, was given by Rafinesque (an early Botany professor at Transylvania College in Lexington, KY) in 1808. The genus name, Isotria, is from two Greek words: Isos, meaning equal, and Tria, meaning three, and refers to the 3 similar/equal sized and shaped sepals. The species name, verticillata (also from the Greek), means having whorls – a ring around an axis and refers to the 5-6 whorled leaves of the beautiful orchid. The name Pogonia was given in the early 1700's by a French Botany professor Antoine de Jussieu, who also named the phacelia. Pogonia, also from the Greek pogon, means beard and refers to some pogonia's fringed/bearded, lower lip. Large whorled pogonia's other common names are Fiveleaf orchid and Purple fiveleaf orchid. When NOT in flower the large whorled pogonia can be confused with the Indian Cucumber Root (Medola virginia) whose stem is slightly hairy and whose leaves are only half-way up the stem.

Spreading mostly by rhizomes, large whorled pogonia can form extensive cloned colonies. Reports of hundreds of plants in various age/growth stages have been recorded. The few populations I've encountered in KY have been less than 20 specimens. Occasionally a seed capsule, approximately 1-1/2 inches long, which contains hundreds of fine/miniscule seeds that are wind dispersed is produced. Pollination is by several native bees who are attracted to the orchid's pollination/nectar guides (purple streaking) and the vanilla scent. But the bees get only pollen as this orchid produces no nectar. Large whorled pogonia may take 7 plus years to mature and flower. Under stressful climatic conditions, it can remain dormant for an unknown amount of years. Endangered in several states, it is unrated in KY. It is however threatened by human impact as in trampling and theft. As with all orchids, large whorled pogonia requires a mycorrhiza fungi in its root system for nourishment. Digging and/or taking this orchid from the wild is illegal and only results in its demise. Other threats include timber harvesting, woodland fragmentation, habitat loss through farming/land development, flooding by natural causes/beaver activity, pollutants, exotic earthworms, decline in native bee populations, and invasive plants.

Large whorled pogonia has a mythological/surreal appearance from which it is easy to imagine several "creatures" or images. With its upper sepal pointing up as the unicorn's horn and its two lower sepals pointing down as elephant tusks and its open mouth as a dragon, one can picture any number of interpretations Most commonly it is described as a mythological startled spider rearing up in anger and assuming a protective stance. The whorl of leaves reminds some of the windmills that are gaining popularity in producing wind generated electricity. Searching the literature I was unable to document any proven/exclusive medical usages of this orchid. Culinary usages by the Cherokees of the large whorled pogonia's young tender leaves in salads or as a potherb are cited. It is the large whorled pogonia's aesthetic value alone, however, which justifies strong and strict preservation efforts to safeguard this rare plant for future generations.

If you hike any number of trails at Kingdom Come State Park, be on the lookout for the beautiful large whorled pogonia. Always stay on trails so as to avoid accidentally stepping on this easily overlooked orchid. If you find it – admire it and be protective of it.

See if you can smell vanilla!

Chris Bidwell – president KY Society of Natural History

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Photo by Chris Bedwell

...Continued from the Fall/Winter Newsletter

EXPLORATION OF THE CAVE

Like most caves in the Louisville Limestone, Eleven Jones' Cave is a small crawlway conduit cave, but rather large when compared to the majority of caves found in Jefferson County. The cave poses several problems: All of the passages in the cave are phreatically developed and are typified by narrow linear passageways most of which are either stoopways or crawlways. Under this kind of physical condition, one can see how this might produce a legend that the cave stretches "for miles back under the city." This cave has only one entrance- this is the reason why air in the cave does not circulate (definitely a criteria for a one-entrance cave) and thus the air becomes very stale. This is the only cave that, to the author's knowledge, has such a distinctive odor of wet charcoal (although David C. Miesner described the smell as being like "a musty old basement").

Two physical survey trips have been made to the cave -- the first was on April 15, 1967 and the second on May 2, 1967. In order to insure an accurate survey of the system the cave was measured with a Brunton pocket transit and steel tape (50 feet in length). The map (Fig. 2) included with this report should dispel most notions that the cave stretches for any great length under the city. The first survey trip, undertaken by James P. Stephens and the author, logged 308 feet of crawlway -- this took several hours to complete. (We were also testing the induction cave radios that were designed by Robert Walker.)

At this point the map survey stopped just 50 feet past the Fourth Turn. The second survey trip, although it could have been disastrous for surveyors J. P. Stephens, William Gobel, and the author, did complete the mapping to the Eighth Turn of the cave (a total of almost 450 feet of passage). The cave still continues beyond this point, but extreme care must be taken beyond this section. The following is an account of our experience which will explain why this is true.

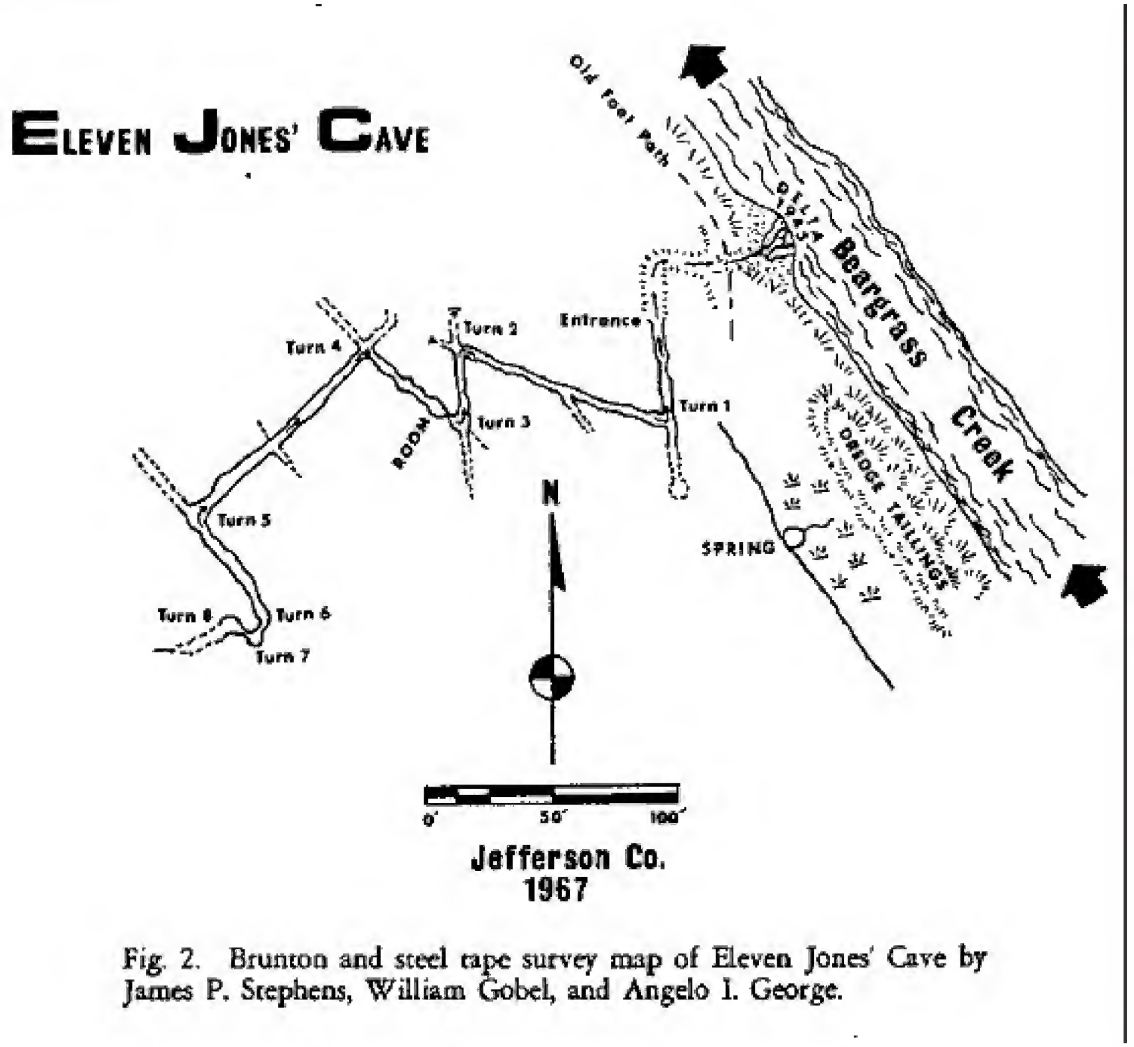


Fig. 2. Brunton and steel tape survey map of Eleven Jones' Cave by James P. Stephens, William Gobel, and Angelo I. George.

On the second trip into the cave we had no more than the usual trouble until we reached the Fifth Turn. The section between Turn Four and Five is a stoopway passage; then the main passage branched to the left at the Fifth Turn at which point the passage becomes a low crawlway measuring about 2 feet wide, and 12 to 18 inches high in some places. A stream about 6 inches deep flows along the floor. Since we were using the Texas shadow method for surveying the cave, Stephens went into the crawlway feet-first in order to project his light onto the pointer and mirror of the Brunton compass. The author followed with the Brunton, and Gobel came into the crawlway last (he was the note taker). Since there was no way to stay dry in this small crawlway the effects of the cold water began to produce a reaction much like that mentioned by Marlin B. Kreider in his paper on fatal exposure to cold water in caves.

The author was the first to feel the symptoms of suffocation. The first reaction was a gradual loss of manual co-ordination, for with every compass reading I would take off my glove in order to manipulate the instrument (it seemed not to be working correctly) and then put the glove back on again. I thought this was just because of the exposure to cold water since I was also experiencing the goose pimple and shivering effect that preceded the loss of coordination. After making consecutive mistaken compass readings, I told Stephens that I did not know how much longer I could take the cold.

Each member of the group experienced the same physiological symptoms, a feeling of being very warm (as if we were in a feather bed and covered with many blankets), a faint tingling in the head, dizziness, and neat unconsciousness coupled with the sensation that there was no more air to breath. In order to conserve oxygen, we extinguished our carbide lamps. With flashlights we crawled backwards to the Fifth Turn where the air did seem much better. When the party reached the surface our tongues were swollen and each one of us had a terrific headache. We experienced a loss of coordination in our feet and legs. In relating our physical experience to Robert Walker, who was then a medical student at the University of Louisville, he theorized we had been poisoned by carbon monoxide generated from the carbide lamps, since this was the only possible source.

If there is no air circulation in the cave, then how, as Robert Barry 1913 article describes, did a" "gust of wind"" blow out a lantern that was carried by several unnamed cave explorers. They were reported to have said, "sumptin' blowed out-the light…" Our experience in the cave shows that carbide lamps will not function properly. The

flame would die down or flicker even after more water was injected and after the tip had been cleaned. It is quite possible that the boys who "went back into the cave for a considerable distance might have undergone the same experiences as their contemporaries. How common is carbon monoxide asphyxiation in caves? Did the group inside the grotto suffer from the effects of that noxious gas, or from exposure to cold water as theorized by Kreider? We are now "thinking that this was not the case, but that there was a carbon dioxide build-up from our own breathing process and the carbide lamps. This effect is described extensively by Norbert Casteret in his book The Darkness Under the Earth.

On August 4, 1968, David C. Miesner and the author made a return trip to the cave in order to excavate a side lead at the Fourth Turn. The party used electric lighting in order to avert carbon dioxide build-up, which plagued the previous group. The silted up section is a northeast trending passage; there is also a northwest filled passage, a 3 feet wide and 8 inch high air gap. The main northeast silt-filled passage is 4 feet high and 5 feet wide. There is a small crawl on the left above the fill choak--it was here that the party started its excavation. One could see that the crawl extended for 12 feet and then dropped away into a stoopway passage making a left turn. Neither the ceiling nor the floor could be seen beyond the fill plug.

The party took 20 minutes to reach the Fourth Turn from the entrance; the time was 2:20 P.M. After some time of arduous digging, Miesner decided to take a break and smoke a cigarette. By now the air in the cave passage had become saturated with a fine mist. The author began digging; the clay was harder than expected. Miesner reached into his water-tight ammo box for his cigarette lighter. The spark from the flint would not ignite the wick. He would turn the flint spindle and the wick would ignite with a long blue flame that would flare up and immediately extinguish itself. Knowing that the lighter had an ample fuel supply and new flint, after eight or nine tries with the same physical results, a decision was made to evacuate the cave. The time was 3:30 P.M., and the cave had become completely saturated with this living fog. From this experience with the cigarette lighter, we found that the cave, once it had occupied for a time where arduous work is involved, does not have enough oxygen to support combustion. A definite carbon dioxide build-up had occurred (if this were a carbon monoxide build-up instead, the flame from the lighter would be either red or white in color). Luckily, this time the party members recognized the danger and made a hasty retreat to the entrance. This cave appears to be safe for short duration trips past the Fourth Turn but longer trips with a long time element are not advised. In our exploration of the Eleven Jones' Cave we were constantly aware of the absence of vandalism inside the cave. Here is a cave that has been known for

at least 132 years and has been visited by one or more groups every year-- at least in the past twenty years-yet the walls have not been damaged to any great extent, although there are some initials carved in the wall around the Fourth Turn. One might even say that the cave is vandal-proof since there are no speleothems, and the stream washes out all foreign matter. Even the 50-foot steel tape used to survey on the second trip which was accidentally left behind, was washed out within a few weeks.

CONCLUSION

Carl G. Jung, in analyzing the status of legends and myths, presented the following statement that may have some bearing on the Eleven Jones' Cave myth: Myths which day has forgotten continue to be told by night, and powerful figures which consciousness has reduced to banality and ridiculous triviality are recognized again by poets and prophetically revived; therefore they can also be recognized "in changed form" by the thoughtful person. The great ones [myths and legends] of the past have not died, as we think; they have merely changed their names.

Perhaps the statement above can help elucidate part of the legend. The cave entrance was big enough to drive a stagecoach through at one time. This entrance according to legend is a dynamic entrance which had the power to shrink to its present-day proportions. This brings to mind the legend of Ali Baba and the Forty Thieves. Eleven Jones' Cave has had a long association with thieves, bank robbers, counterfeiters, murderers, etc. Ali Baba, upon coming to the treasure cave hidden by a secret entrance, would call out and say "open sesame" whereupon the secret entrance doors parted revealing a large mouth cave in all its splendor. This is a remarkably similar legend but in "changed form" as Jung would say.

ACKNOWLEDGMENTS

The author would like to take this opportunity to thank James P. Stephens, Bill Gobel, and David C. Miesner who helped with the physical survey of the cave. Additional thanks to Mrs. Anna Angelo who proof read the manuscript prior to publication.

SMOKY NOTES

Everyone attending this spring conference in the Great Smoky Mountain National Park would have a story to tell with unique viewpoints. Some of this is based on each person's level of knowledge and experience, but also possibly on an emotional level. However you slice it, it would be hard to do better than to be in the Smoky Mountains on such a perfect weekend. I just wanted to briefly share some things that stick in my mind from this KSNH conference.

A trip to the Park in the spring certainly reinforces a comment made by state President Chris Bidwell that "… we need at least two Aprils". This spring conference provided a number of tough choices on the part of Society members in attendance. Each field trip looked as good, or even better, than the next! Alas, nobody had a handy formula for being two places at once, so choices had to be made. It was really impossible to make a bad choice. Chris did a yeoman's job with scheduling a truly fantastic conference.
Thanks Chris!

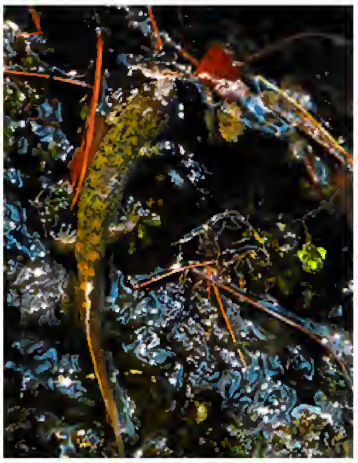
The early bird Thursday outing to the Cosby Campground area was a delight for the eye. It allowed members to escape the surge of crowds near the Park's main drag, and stroll amongst our flowery friends. Many of the ephemerals not yet at peak in Kentucky were in full glory there. However, some did show their reluctance in springing forth given the harsh winter. The Dwarf Ginseng was in full bloom and Fringed Phacelia was so abundant in places that it looked like a blanket of snow.

KSNH's special guest for the weekend was Dennis Horn, co-author of "Wildflowers of Tennessee, the Ohio Valley, and the Southern Appalachians". He proved to be a real delight in the field by not only speaking of plants seen by those with him, but also in sharing stories and insights into many lesser known features and botanical rarities throughout the region. I enjoyed hearing of the discovery of a new trillium, the Tennessee Trillium, and of the obscure differences among trout lilies that few have heard about outside of a few enthusiasts. I'll enjoy his book so much more now that I've walked side by side with him in great surroundings. The Yellow Trilliums in areas were so thick that they looked like an invasive species, rather like dandelions. For the first time, I saw the Alternate Leafed Dogwood, the Oil or Buffalo Nut shrub, and a Black or Sweet Birch Tree with bark like blackened Frito Chips. A real surprise was to see the Canada Mayflower. This is primarily a northern species that isn't very common in Appalachia. Credit goes to Marge Conard for her sharp eye in spotting this one.

Troy Evans a NPS forest technician with the Park and an assistant, Rene, took me somewhat deeper into the forest near Greenbrier to view the "Greenbrier Giant"; the most voluminous Tulip Poplar in the Park. Troy has strong Kentucky roots from Martin County having also been educated at EKU. He helped me identify the Sourwood tree by its football shaped trunk, along with the Yellow Birch, as well as the Cucumber Magnolia and the Frazier Magnolia. It was a great day to explore, see, and learn.

Another memorable experience was spending time with Brooks Nichols, an NPS entomologist who has worked at the Park for over 17 years. She took us out to seine and dip streams so that she could point out various aquatic insects and what they indicate as to stream quality. We found an abundance of different Stonefly, Mayfly, and Caddis fly species, along with other critters dwelling in the various micro-habitats in the water. Brooks has an awesome responsibility of monitoring streams at varying elevations in the Park by detailed data collection, analysis, and reporting of findings. David Sangster, a KNSH member, has a strong background in this area and was helpful in identification as well. I found it amusing when he told Brooks of two insects with hemoglobin of which she was not familiar.

At the end of our time with her, we looked for a midge on the face of a waterfall. While there, David and I spotted two salamanders clinging to the wall in and among the moss. They were lying flat with heads elevated and mouths open to catch any prey cascading down the falls. Here's a shot of one if anyone would like to ID it. (insert photo). This was a fine way to end the afternoon.



The reports from members that attended the many other field trips all reported very positive things about their experiences. My only regret is not being able to attend all of the other field trips. Hearing reports from others made it clear that nobody was short changed. We are blessed to be able to experience such wonderful place in a way unknown to the vast majority of Park visitors. Hope to see you at the next conference for more adventure.

Happy Trails!

Wayne Kimbel

All Photos in this article by Wayne Kimbel

Send your articles and messages to Dave Luzader dluzader@twc.com for our next newsletter.

Remember to visit our website often for the latest news and updates.

http://www.ksnh.org

Kentucky Naturalist News

Official Newsletter of the Kentucky Society of Natural History

Volume 72 Number 3 - Summer 2014

FROM THE PRESIDENT

Summer – Already we have reached record temperature highs. Just when the winter heating bills have passed, now we must contend with air conditioning costs! Gas prices now hovering at $4.00 a gallon only adds to our economic woes. With all these energy/economic issues facing us today, one cannot fail to see the need to be better stewards of our world. Stewardship is defined as an ethic that embodies responsible planning and management of natural resources – taking an active role in our society to use our precious resources wisely. We all can be better stewards and save/preserve our habitat and economic situation be setting thermostats at a reasonable temperature. Gas can be used more efficiently by carpooling, reducing redundant driving hops to the store(s), buying more energy efficient vehicles, keeping proper tire pressure, and maintaining vehicle tune-ups are just a few recommendations.

In KSNH activities – Our July picnic on Thursday, July 17, at Jefferson County Memorial Forest is on the website. Barbecue will be provided by KSNH. Attendees need to bring a side dish or dessert to share and your own drinks.

Our Fall Conference at KenLake State Resort Park (October 2-5) is on the website. There is both a short and long form of the agenda to help people decide which events to choose. Registration form is also on line. Remember that you must call for your room by August 1st! If you would like to share a ride or room to help defray costs or you need a ride or would like to share a room, contact Wayne Kimbel or me.
Have a great summer. Make KSNH activities a key part of your summer fun. Remember to wear light clothing, use sun screen, and drink plenty of fluids. Get out and enjoy our natural world. Have a safe, economic, pleasurable summer. Take lots of pictures!

Chris Bidwell

Spicebush Swallowtail Dave Luzader

Pray to What Earth

By Henry David Thoreau

Pray to what earth does this sweet cold belong,
Which asks no duties and no conscience?
The moon goes up by leaps, her cheerful path
In some far summer stratum of the sky,
While stars with their cold shine bedot her way.
The fields gleam mildly back upon the sky,
And far and near upon the leafless shrubs
The snow dust still emits a silver light.
Under the hedge, where drift banks are their screen,
The titmice now pursue their downy dreams,
As often in the sweltering summer nights
The bee doth drop asleep in the flower cup,
When evening overtakes him with his load.
By the brooksides, in the still, genial night,
The more adventurous wanderer may hear
The crystals shoot and form, and winter slow
Increase his rule by gentlest summer means.

~

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Meets every third Thrusday of each month except Jan, Jul, Aug & Dec at the Louisville Nature Center, 3745 Illinois Ave. Chapter President: Wayne Kimbel Email: waykim1@twc.com

Fall Conference Oct. 2 - 5, 2014

Kenlake State Resort Park

Kenlake Reservations
Phone: (270) 474-2211

You must call for your room by August 1, 2014

Falls of the Ohio Chapter

July 17th Picnic

The Regular KSNH Pot Luck will be held at Horine Conference Center.

Wayne Kimbal

Butterfly 'eyespots' add detail to story of evolution

The eyespots on this squinting bush brown butterfly are helping researchers answer questions about fundamental evolution.

A new study of the colorful "eyespots" on the wings of some butterfly species is helping to address fundamental questions about evolution that are conceptually similar to the quandary Aristotle wrestled with about 330 B.C. -- "which came first, the chicken or the egg?"

After consideration, Aristotle decided that both the egg and the chicken had always existed. That was not the right answer. The new Oregon State University research is providing a little more detail.

Credit: William Piel

The study, published in Proceedings of the Royal Society B, actually attempts to explain the existence of what scientists call "serial homologues," or patterns in nature that are repetitive, serve a function and are so important they are often retained through millions of years and across vast numbers of species.

Repeated vertebra that form a spinal column, rows of teeth, and groups of eyespots on butterfly wings are all examples of serial homologues. Researchers have tracked the similarities and changes of these serial features through much time and many species, but it's remained a question about how they originally evolved.

Put another way, it's easier to see how one breed of chicken evolved into a different breed of chicken, rather than where chickens -- or their eggs -- came from to begin with.

Butterfly wings are helping to answer that question. These eyespots, common to the butterfly family Nymphalidae, now serve many butterflies in dual roles of both predator avoidance and mate identification. One theory of their origin is that they evolved from simpler, single spots; another theory is that they evolved from a "band" of color which later separated into spots.

"What we basically conclude is that neither of the existing theories about butterfly eyespots is correct," said Jeffrey Oliver, a postdoctoral scholar in the Department of Integrative Biology of the OSU College of Science. "The evidence suggests that a few eyespots evolved as a group at about the same time, but behaved somewhat as individual entities."

Having appeared as a result of some genetic mutation, however, the eyespots then had the capability to move, acquire a function that had evolutionary value, and because of that value were retained by future generations of butterflies. And at all times, they retained the biological capacity for positional awareness -- the eyespots formed in the same place until a new mutation came along.

"At first, it appears the eyespots helped this group of butterflies with one of the most basic aspects of survival value, which is avoiding predators," Oliver said.

On the side of the wing that predators saw when the wings were closed, the eyespots could have served as camouflage from a distance, and up close almost a "bulls-eye" for a predator to see and attack. But this directed the attack toward the tips of less-important wings, and not the more vulnerable head or body of the insect.

But just as important, Oliver said, the study indicates how through continued mutation these eyespots moved to a completely different place -- the other side of the wing. There, they performed a completely different function -- helping the butterfly to attract and be identified by optimal mates.

"If you take this same concept and apply it to other important features like vertebra and a spinal column, it suggests that some small number of bones would form through mutation, and eventually move, join and be perpetuated as they acquired a function with survival value," Oliver said.

"There would be a biological position in which they were supposed to form, and that would be retained," he said. "And over time, the vertebra might expand in number, and acquire other functions that had nothing to do with their original function, but which still had value."

The evolution of life has never been simple, as Aristotle and the other early philosophers found out. But one bone or butterfly eyespot at a time, the pieces continue to come together.

Story Source:

The above story is based on materials provided by Oregon State University. Note: Materials may be edited for content and length.

Journal Reference:

1. J. C. Oliver, J. M. Beaulieu, L. F. Gall, W. H. Piel, A. Monteiro. Nymphalid eyespot serial homologues originate as a few individualized modules. Proceedings of the Royal Society B: Biological Sciences, 2014; 281 (1787): 20133262 DOI: 10.1098/rspb.2013.3262

Fungus may help stop invasive spread of tree-of- heaven

A Penn State researcher found considerable wilt and death in a tree-of-heaven grove in a southwestern Pennsylvania forest in 2003. Further research suggested that a fungus was causing the dieback.
Researchers now believe that the fungus could play a key role in controlling the invasive spread of the tree-of-heaven.
A naturally occurring fungus might help curb the spread of an invasive tree species that is threatening forests in most of the United States, according to researchers.

Researchers tested the fungus -- Verticillium nonalfalfae -- by injecting it into tree-of-heaven, or Ailanthus, plots, according to Matthew Kasson, who recently received his doctorate in plant pathology and environmental microbiology from Penn State. The treatment completely eradicated the tree-of-heaven plants in those forests.

"It appears that this treatment is effective in Pennsylvania and could be used as a bio-control agent throughout the United States," said Kasson.

Since tree-of-heaven's introduction into Pennsylvania in the 1780s, the tree has spread from a rare and prized plant for collectors to a nuisance in at least 40 of the 48 contiguous states, according to Kasson.

"Trying to find the best way to get rid of tree-of-heaven has become a serious land-management issue," said Kasson. "Fire doesn't seem to work and chemicals and mechanical means are expensive and ineffective, too."

Using a hatchet that is designed to pump fungal spores into the trees, the researchers tested the fungus on 14 tree-of-heaven stands in south-central Pennsylvania. Usually, it takes three blows of the hatchet to deposit the entire inoculation of about 30 million spores for each tree. The inoculation kills the entire tree, including the sprouts. The researchers report their results in a recent issue of Phytopathology.

"It's important that the sprouts are killed, too, because, tree-of-heaven has an extensive system of sprouts that spread just above the ground surface, which is one of the reasons the tree is so difficult to manage," said Kasson. "The sprouts can immediately grow even if the top canopy of trees dies."

Don Davis, professor of plant pathology, Penn State, said that in 2003, he noticed a large number of tree-of-heaven deaths in a southwestern Pennsylvania forest. The foresters in the area then took him to a site where large-scale wilt was affecting the trees.

"There were hundreds if not thousands of dying and dead tree-of-heaven in the area, which is very unusual, because tree-of-heaven is very hard to kill," said Davis.

The researchers noticed a number of Ambrosia beetles near the infected stands, leading them to theorize that the fungus, often carried through the forests by beetles, was involved in the tree deaths.

"The Ambrosia beetles may explain some of the long-range spread of the disease," said Davis. "One theory is that the beetles feed on an infected tree and then take those spores to another healthy tree, which could be miles away."

The effect that the fungus has on other plants will be the subject of further research, Kasson said. However, preliminary studies on the vegetation that surrounds Ailanthus groves indicate the fungus may not harm nearby plants and trees. Only a small percentage of plants near the infected tree-of-heaven plots showed signs of being harmed by the fungus.

"There are still tests and studies that need to be done in the future to make sure it's completely safe," said Kasson. "As a researcher, you can't be sure until the results of all of those tests are in, but, at this point, I am cautiously optimistic."

Story Source:

The above story is based on materials provided by Penn State. The original article was written by Matt Swayne. Note: Materials may be edited for content and length.

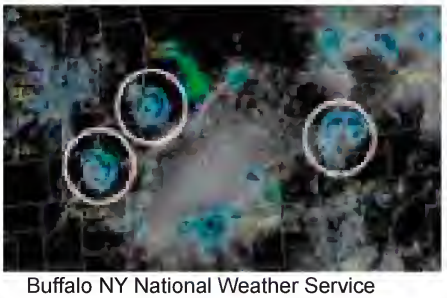
PMSS Educators Receive Award

Ben and Pat Begley

On December 12th, Kentucky State Nature Preservation Committee bestowed its highest honor, the 2013 Biological Diversity Protection Award, to Ben and Pat Begley. The award was given in recognition of their 27-year tenure teaching environmental education to more than 75,000 students at Pine Mountain Settlement School.

Using Technology with Aeroecology

by Pat Meyer



Buffalo NY National Weather Service

In 2008 Thomas H. Kunz, professor of biology and director of the Center of Ecology and Conservation Biology at Boston University, is the lead author "Aeroecology: probing and modeling the aerosphere," a research report* in Integrative and Comparative Biology, based on a symposium sponsored by the Society for Integrative and Comparative Biology in January 2008. He founded a new emerging scientific discipline of aeroecology, which explores how animals, plants, insects and other organisms live in, move through as well as their dependence on the aerosphere. The aerosphere is also known as the planetary boundary layer of the Earth's atmosphere which supports life It stretches from about 650 to 1,650 feet.

Kunz, who is best known for his extensive research on bats, describes aeroecology as integrating the domains of atmospheric science, earth science, geography, ecology, computer science, computational biology, and engineering.
Organisms that use the aerosphere, such as arthropods, birds and bats, are also increasing influenced by an number of man-made conditions and structures, particularly lighted towns and cities, air pollution, skyscrapers, aircraft, radio and television towers, plus the recent number of communication towers and wind turbines.

"Appropriate integration of diverse tools and concepts for probing into the lives of organisms aloft can help inform important ecological and evolutionary concepts and management decisions associated with the spread of invasive species, emergence of infectious diseases, altered biodiversity, and the sustainability of terrestrial, aquatic, and aerospheric environments," states Kunz.
Instruments now being used such as weather radar observations can be used for many other uses other than just the weather, for instance bird and bat flights migration and traffic of birds around airports. Scientists can also utilize thermal imaging cameras, and acoustic monitoring.

Weather radars (including national networks such as NEXRAD) collect enormous quantities of data which is available for study through their archives as well as in real time which can be use for advancing research.

The idea for this article is from the June issue under The Crux section of Discover magazine. I then obtained some other information through other research online about the subject.

My Old Colorado Home

by Berl Meyer

Fremont County (fig. 1) is located in south-central Colorado, bordered by Pueblo County on the east, Teller County on the north, Saguache County on the west, and Custer County on the south. The Promontory Divide marks the boundary between Fremont and Huerfano counties and also divides the Wet Mountain Valley on the north from Huerfano Park to the south. The San Isabel National Forest encompasses substantial areas of eastern and western Fremont County.

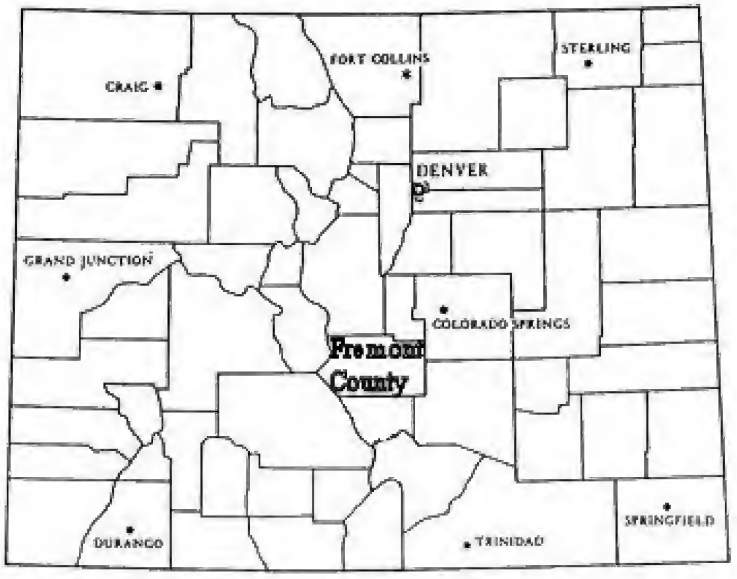


Figure 1

Fremont County boasts some of the most beautiful mountain scenery found anywhere. The foundation of that scenery is the county's geologic record, a record that includes a variety of rocks and sediments.

Rocks make up the essential part of the Earth's crust and preserve clues that enable geologists to interpret the geological past of our planet. Although rocks form in a variety of ways, they generally are classified into three major groups or families: igneous, sedimentary, and metamorphic. Fremont County has all three.

Igneous rocks, named for the Latin word for fire, solidify from hot molten silicate material called magma. When magma cools slowly below the Earth's surface, coarsely crystalline rocks like granites form. When magma reaches the Earth's surface, it is termed lava. Lava generally cools quickly and produces finely crystalline rocks such as basalt. Extremely rapid cooling produces volcanic ash, pumice, scoria, or glass.

The rock record of Fremont County reveals both intrusive igneous rocks formed at depth and extrusive igneous rocks formed at the surface. In addition, volcanic ash and other ejecta are found locally. The historically-significant metallic deposits of the county were produced by igneous processes.

Sedimentary rocks are composed of grains or fragments of preexisting rocks, chemical precipitates, or organic remains. The materials composing sedimentary rocks have usually been transported by agents such as running water or marine currents. Common sites for accumulation of sedimentary rocks include river channels, alluvial fans, coastal lowlands, sand dunes, deltas, lakes, and seas. Fossils are often associated with sedimentary rocks, and they provide key information about depositional environments.

Fremont County has an intriguing record of sedimentary rocks and sediments. The deposits reveal ancient settings such as alluvial fans, stream channels, deltas, sand dunes, glacial moraines and outwash plains, and both shallow and deep marine seafloors.

The Sangre de Cristo Range, the Wet Mountain Valley, and the Wet Mountains (left) are dominant geologic features in the Fremont County area. The county is part of the Southern Rocky Mountain Province, a region consisting primarily of north-south mountain ranges with cores of Precambrian igneous and metamorphic rocks. The mountains are usually flanked by inclined sedimentary strata of Paleozoic and Mesozoic ages.

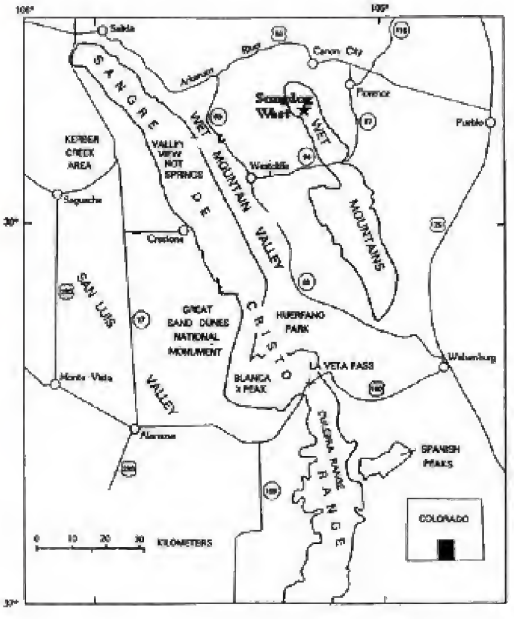
The Sangre de Cristo Range extends from the Arkansas River valley near Salida for nearly 150 miles to just beyond Santa Fe, New Mexico Some geologists apply the name Culebra Range to the segment of the range that extends south from La Veta Pass in southern Colorado into New Mexico.

The Sangre de Cristo Range, originally considered to be a large anticlinal structure (upfolded region), is now known to be more complex. The structure of the Sangres is complicated by low-angle faults that functioned as thrust faults during Laramide deformation when the Rocky Mountains were laterally compressed during Late Mesozoic to Early Tertiary time. Later in the Cenozoic (mid-Tertiary), the bordering fault systems of the Sangres were reactivated, and the range was uplifted as a block (horst). The San Luis Valley to the west of the Sangres and the Wet Mountain Valley to the east formed where large blocks (grabens) dropped downward along faults. The Wet Mountains underwent uplift along flanking fault systems too.

The Wet Mountain Valley, a high-elevation intermontane basin, is similar to the larger South Middle, and North Parks located north of the Arkansas River. The name "park" is also applied to the intermontane region (Huerfano Park) located between the Sangres and Wet Mountains in Huerfano County.

The Wet Mountains flank the Wet Mountain Valley on the east. Sedimentary strata have been eroded from the crest of the mountains, exposing Precambrian igneous and metamorphic rocks which dominate the present landscape of the Wet Mountains.

So Songdog East (in Louisville) and Songdog West (in Fremont County, CO) are quite different geologically.



SUMMERTIME…KEEP ACTIVE, KEEP LEARNING.

It's June and nature's energy is in full glory and force. Although we try to be vigilant to the cues of nature, it is sometimes easy to get overwhelmed by our own to-do lists. We want to know all that is going on in our natural world, but have to be content knowing there isn't going to be a test and there will always be more to learn about it. Aldo Leopold in his classic book "Sand County Almanac" wrote this "It is fortunate, perhaps, that no matter how intently one studies the hundred little dramas of the woods and meadows, one can never learn all of the salient facts about any one of them". So, there are a lot of unknowns out there, which is a good thing.

At the Falls Chapter meeting in May, we were blessed to have Phil Tamplin speak about Eastern Bluebirds. He gave an excellent presentation on their habits and other facts from his study of them. Phil has pursued his passion for over 15 years which was sparked by himself hearing a presentation from another likewise passionate speaker. His enthusiasm is infectious and is evident in his talks. He builds Bluebird boxes in large quantity and donates them to groups and individuals that have a place for them. I can attest to this because I have seen the stacks of built boxes in his garage and the cut wood pieces for those yet to be built houses.

For the May field trip, we visited Foxhollow Farms in Oldham County to try and view Bluebirds on the nest or flight. Due to a special event, the offices were not open, but we were free to wander the property to see some of the boxes that Phil had installed nearby. Nature is unpredictable and it seemed that the Tree Swallows had invaded many of the boxes, along with some Chickadees. We did see some Bluebirds and one mother tending her eggs. All in all, it was a very enjoyable and rewarding outing. In my previous visits, I have seen many, many more Bluebirds and live chicks, so folks should keep Foxhollow Farms on their list of good birding venues for sure. Thanks to Phil for his time and talent donated to us.

Following the time with Phil, some of the group visited a part of the trail being developed by a group known as the Brownsboro Alliance. It is composed of land owners in the immediate area, friends, and concerned folks that are hoping to create an approximate 8 mile loop trail across private land. Debbie Stevens, one of their board members, guided us to a trail head of rolling farmland and then down to an area of lush forest. Thanks to Debbie and also Cathy Roberts with the Alliance for introducing us to this work in progress.
The June meeting will allow us to hear from a local birding expert, Del Striegel. He will share with us his experiences in seeking out warblers and give tips on how to be a better birdwatcher. Del was able to receive a grant to study Prothonatory Warblers along a corridor in Southern Indiana, and he'll tell us about that experience and outcome too. Del does a great deal of volunteer work at the Falls of the Ohio State Park and you can often catch him there with a spotting scope.

For the June outing, Del will be taking us to the O'Bannon State Park east of Corydon, Indiana. Del has spent a great deal of time working inside the Park with the local full time naturalists in bird census along with other projects. The walk he has planned is along a handicapped accessible route of less than a mile. He close this location due to his success there in his bird inventories. It'll definitely be worth the drive on June 21st. This is an opportunity to learn from one of the best in our area.

In July, we'll be having our annual picnic on July 17th at the Horine Conference Center in the Jefferson Memorial Forest. This is a chance to enjoy fellowship and relaxation. The Chapter will provide the entrée and some side items, while members bring dishes in pot luck fashion for others to enjoy. Dick Dennis, KSNH member, has said he would do a talk about his work through a U of L class that involved the study of a section of Beargrass Creek. Dick is a true lifelong learner and proves it by taking challenging academic classes despite being retired from the legal profession. Be sure to join us for this fun time.

So, be ready get outdoors and enjoy the sights and sounds of nature with your fellow Society members. Rest assured that you'll always learn something at each outing and meeting. We just have to remember Aldo Leopold's observation that what we know will always be a little incomplete.

Happy Trails!
Wayne Kimbel

Notes from the Nature Nut

By W.H. (Wally) Roberts

Summer, 2014

Many of you probably remember watching the television cartoon series entitled "Woody the Woodpecker" created by cartoonist Walter Lantz. For me, the most memorable feature of "Woody" was his loud jungle bird-like call.

All I knew about "Woody" was that he resembled a large woodpecker that we would see occasionally around our home. I did not know that the cartoonist, Walter Lantz, had actually modeled "Woody" after the Pileated Woodpecker, one of the larger, most striking forest birds on the continent. It is nearly the size of a crow, black with bold white stripes down the neck and a flaming red crest.

I did not know, until after college, that many people, having never seen a Pileated Woodpecker in the wild, thought that "Woody the Woodpecker" was merely a cartoon character from the pen of Walter Lantz.

One night, at a cookout, I was talking about Pileated Woodpeckers at the Beargrass Creek State Nature Preserve when two of our friends said that they had never seen any of those large woodpeckers and that they believed they did not exist. I immediately invited them to come back the next day to take a walk to the Louisville Nature Center and, hopefully, observe the birds. It just so happened that I had been observing a Pileated Woodpecker nesting site for several weeks. So late the next afternoon, I took my friends to the site and, upon seeing the birds up close, they both simultaneously gasped, "Oh My God". I agree with their statement since everything about the Pileated Woodpecker is impressive…its size, its movements, the loudness of its voice, the power it expresses as it chips away tree trunks, and its unusual beauty. Pileated Woodpeckers are truly the Kings of our woodpecker world and what magnificent woodpeckers they are.

Pileated Woodpeckers occur throughout Kentucky, but are less frequent in the Bluegrass Region. Their habitat stretches from the mixed mesophytic deciduous and coniferous woodlands of Eastern Kentucky to the cypress swamps of Western Kentucky. Pileated Woodpeckers can also be found in suburban areas with large trees and other patches of woodland.

These birds are more often heard than seen since their call is loud and jungle-like. Their territorial drumming is equally loud and sounds like a wooden mallet beating on a dead log. They feed mostly on carpenter ants, pecking oval holes both for food and for nest sites. These oval holes are the easiest and most reliable clue to existence of Pileated Woodpeckers in a particular area. They also feed on wild fruit, nuts, and will occasionally visit backyard bird feeders for seeds or suet. Special Pileated feeders are available at bird stores and online. The feeders hold two small suet cakes and have a foot-long prop board at the bottom so the woodpeckers can brace with their tails during pecking and feeding.

The males and females are essentially identical with the exception of a red stripe of feathers under the jaw on the males. They do not have the undulating flight patterns of other woodpeckers and rather fly straight like a crow. You can often see them flying from hilltop to hilltop across valleys and straight down hiking trails and woodland roads.

Historically, Pileated Woodpeckers probably declined greatly with the clearing of the eastern forests, but rebounded in the middle twentieth century as these forests grew back. Their populations steadily increased from 1966 to 2010 according to the North American Bird Survey. Like all things in nature, it is important to maintain habitat for survival of the species. The oldest known Pileated Woodpecker lived for almost 13 years.

It took us nearly ten years to get Pileated Woodpeckers to come consistently to our feeders at Hawthorne Pointe, but it was worth the effort since, not only do we get close-up views of the birds, we also have been able to show these magnificent woodpeckers to many people for the first time.

Special thanks to "All About Birds" and the Cornell Lab of Ornithology

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PERFECT HUNTERS

By: Chris Knopf, KSNH member

Dragonflies have been called "the perfect hunting machine." Most people only think of dragonflies in their adult, flying stage. They can also be top predators in their nymph stage.
Nymphs are all carnivores are well as being voracious predators. Living in the shallows along pond and stream edges, they look nothing like their adult form. They have a hard exoskeleton, jointed spidery legs and excellent mottled brown camouflage. Lying just under the topmost surface of soil, gravel and plants near the water's edge they watch for the movement of their prey and reach out to grab their next meal with their impressive prehensile lower jaw, or labium. The labium acts almost like an additional limb, quickly carting out to grab their prey and bringing it into their mouth. The nymphs feed on just about anything in the water, beginning with tiny single cell plankton such as daphnia and cyclops, and nematodes in their earliest stages of life. As they molt and grow, they begin to hunt larger prey: mosquito larvae, other aquatic insects and worms, and even small aquatic vertebrates such as tadpoles and small fish.

After spending 2-6 years in their aquatic nymph stage, it's time to emerge. The length of the nymph stage is dependent on their species as well as location. Some of the northern nymphs taking longer to go through nymph stages then those in the southern regions. In the Spring and Summer, gill breathing nymphs begin to change over to breathing through lungs as they start venturing out of the water more frequently and onto woody plants along the shoreline. This process begins as night time temperatures warm consistently to somewhere around 56 degrees. The nymphs will start taking in large gulps of air to help their bodies swell and crack open the exoskeleton. It takes only a short while for the adult dragonfly to emerge, however, they are in their most vulnerable stage at this point. Their body is soft and wings wet, and as yet unfolded. They are unable to fly for about an hour. This is when they are most susceptible to predation by other creatures, most particularly by birds.

In Spring, within about a week's time, there are larger mass appearances of the early emerging species such as Baskettails. Springtime Darners, and those from the Emerald family. Summer species in the Clubtail and Skimmer families, emerge over extended periods of time lasting weeks to months. The Spring mass emergences may serve to confuse birds and frogs by their sheer number, ensuring that some dragonflies will survive to produce the next generation. In their adult stage, dragonflies are relatively short-lived, most only surviving only 2-4 months. Once they have mated and laid eggs, the adults will die.

Adult dragonflies are the rulers of their domain. A single dragonfly can eat the equivalent of its bodyweight in about 30 minutes. They are built for hunting. Their most prominent feature is their eyes. They rely solely on these to detect their prey. Dragonflies have three small simple eyes and two large compound eyes. The purpose of the small eyes still isn't fully understood, but they may help to discern light from dark, and help to maintain stability and orientation. More than 80 percent of a dragonfly's brain is used to process visual information. The large compound eyes contain 10,000 to 30,000 facets, each of which focus in a different direction. This allows the dragonfly to see in nearly every direction at the same time, except for a small blind spot directly behind their wings. Dragonflies also have excellent color vision. Humans have three light-sensitive proteins in our retinas. Dragon flies can have four or five, allowing some species to see in the ultraviolet range.

Dragonflies have two sets of wings which allow them to lift more than twice their body weight. Each of the four wings operate independently of each other, giving them incredible maneuverability. They can fly forwards, backwards, make unbanked turns, lift off vertically and stop on a dime. Females have 40 percent flying muscle weight, while Males have 60 percent. This also allows them to fly great periods of time over long distances, at speed of 25 to 35 miles per hour. Their wings are very efficient, flapping at about 30 times a minute, compared to 600 flaps a minute by mosquitoes and 1,000 a minute by houseflies.

Very little can escape dragonflies. They sometimes perch on tall grass and sticks to survey the local food availability, or they will fly while hunting. Prey can be scooped up in mid-air by forming a basket shape with their barbed legs. Prey is then eaten while still flying or perching. Again, that formidable lower jaw shoots out to crush and carry the food into their mouths. Prey for an adult consists of mosquitoes, gnats, mayflies and other small flying insects. The larger dragonflies will occasionally eat butterflies, moths and bees. Most often hunting alone, swarms of dragonflies have also been known to hunt large colonies of ants and termites. They do a tremendous job in helping to keep mosquito populations under control.

When you consider that some ancient dragonflies had wing spans of two and a half feet, eating other insects and even small amphibians, you have to wonder what they would feed on today if we still had those large predators around us.

Send your articles and messages to Dave Luzader dluzader@twc.com for our next newsletter.

Remember to visit our website often for the latest news and updates.

http://www.ksnh.org

KSNH FALL CONFERENCE – KENLAKE STATE RESORT PARK **October 2-5, 2014**

ALL TRIPS CENTRAL TIME ZONE

All meals on your own. All trips leave from Lodge unless otherwise stated. Note departure times and carpool when possible. Take cameras, water, binoculars, and tick spray.

Field Trip Activity Ratings:

Easy – short hikes –flat/little slope

Moderate – hiking at a comfortable pace on generally level terrain; trails or no trails. Must be able to negotiate uneven surfaces and get across occasional logs.

EARLY BIRD TRIP – Thursday, Oct. 2 2 pm – 4 pm

Thursday, Oct. 2 Woodland Nature Center EASY
Leave Lodge 1:30 pm Leader: Aviva Yasgur, Group Program Coordinator
"Backyard Safari" program – tour of Nature Center's flora and animals: owls, fallow deer, red wolf, and bald eagle
Choice of several EASY trails to explore
$3.00 per person

Friday, Oct. 3 Trace – South, Driving Tour (47 miles one way) EASY
9 am – 3 pm Leader: Berl Meyer
Driving tour includes: Home Place ($3.00 per person), Great Western Iron Furnace ruin, Fort Donelson Civil War Historic Site, Cross Creek NWR
Lunch in Dover, TN

9 am – noon New Central Hardwood Scenic Trail – drive time 30 mins. EASY
Leave Lodge 8:30 Leader: Travis Brown
2 miles round trip

LUNCH 12:30 ON YOUR OWN

1:30 pm – 2:30pm CHEROKEE STATE PARK – Power Point Presentation EASY
Leader: Tammy Nanney
In Lodge Conference Room

1:30pm – 4:30 pm HEMATITE TRAIL MOSTLY EASY
Leave Lodge 1 pm Leader: Dr. Dwayne Estes
2 miles round trip

1:30 pm – 4:30pm ENERGY LAKE CANOE TRIP
Leave Lodge 1:00pm Meet staff at Energy Lake Campground
$25.00 per Canoe / 3 people per canoe

DINNER ON YOUR OWN

7 pm EVENING PROGRAM – Meet in Lodge Conference Room
Welcome and Introduction – Chris Bidwell
Recap activities of Thursday and Friday
SPEAKER: Dr. Nancy Dawson, CSP
Cherokee State Park

Saturday, Oct.4 Terrapin Creek State Nature Preserve – in Graves County
9am – noon Leader: Travis Brown EASY TO MODERATE
Leave Lodge 8:30am Drive Time – 30 minutes
Wear hiking boots – may need hiking stick approximately 1 mile

9am – 4 pm Trace – North, Driving Tour EASY
Leader: Chris Bidwell
Will visit: Golden Pond Visitor Center and Planetarium
Elk and Bison Range – get tokens at Golden Pond Visitor Center ($5 per carload)
Duncan Lake – eagle viewing
Patti's Grand Rivers for lunch
Smith's Bay – eagle viewing
Woodland Nature Center ($3 per person)
Bring spotting scopes, binoculars – And an appetite for Patti's!!!

LUNCH ON YOUR OWN Noon to 1:30

Saturday, Oct. 4 Clark's River NWR EASY

1:30pm – 4:30pm Leader: Stacey Hayden
Leave Lodge 1 pm Drive time – approximately 15 minutes, meet Stacey at Headquarters
Hiking distance - approximately 2 miles

7 pm EVENING PROGRAM – Meet in Lodge Conference Room
Welcome and Introduction – Chris Bidwell
Recap Saturday activities
KSNH Pictures – Susan Wilson
Door Prizes – Cindy Payne
Board Meeting – All Are Welcome!!!

Sunday, Oct. 5 Mantle Rock
11 am Leaders: Margie and Ken Conard
Leave Lodge 9 amThis is an extra road trip on your way home
Approximately 60 miles to Mantle Rock
1 mile EASY trail at Mantle Rock

HAVE A SAFE TRIP HOME!

Kentucky Naturalist News

Official Newsletter of the Kentucky Society of Natural History

Volume 72 Number 4 Fall 2014

FROM THE PRESIDENT

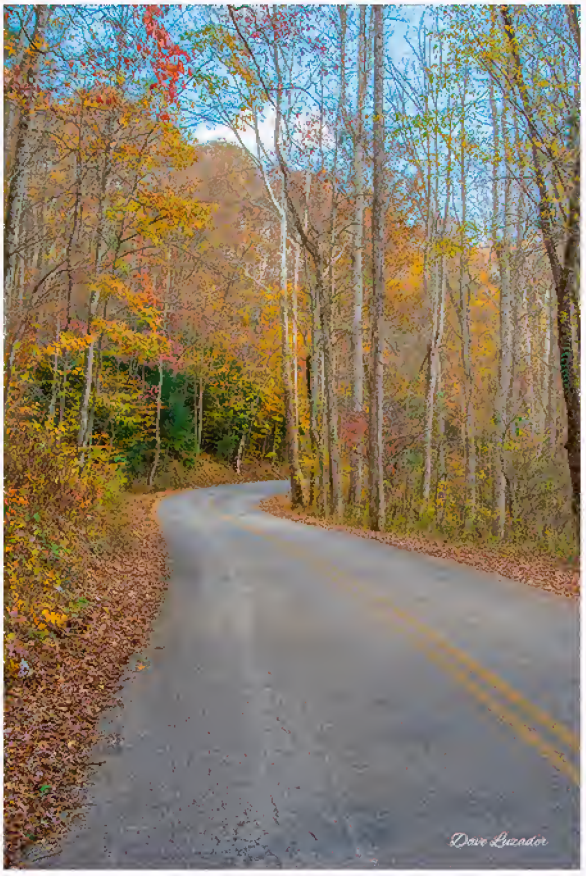
Hope summer has been good to everyone. I have been busy getting our Fall Conference at KenLake State Resort Park and Land Between the Lakes ready. You will have many good speakers and lots of events from which to choose. If it is hard to make a decision on which trips to pick, then that is great as I want trips to be competitive. As I have mentioned many times, I appreciate any ideas/ suggestions for speakers, trip leaders, or sites to visit. So let me know what you prefer on these conference agendas.

In November I will have our Spring agenda out for Natural Bridge State Resort Park in April 24-26, 2015. Again you will have events to decide on.

Keep active at the Falls Chapter meetings and outings. Please let Wayne or me know of speakers and/or outings for the group.

Leaf-peeping season is here. Get your cameras ready and enjoy the beautiful changes Mother Nature provides for us this time of year.

Chris Bidwell



Autumn

By Julie L. O'Connor

There's a crispness in the air that greets the morning sun, a feeling of anticipation, a new day has begun. Harvest days are ending, winter is drawing near, yet in between is surely the most special time of year. They call it Indian Summer, and it seems to fit the bill, for it's as if the Lord took a feathered brush and painted all the hills.

So I say that the eyes are a window, beauty is found within the soul, and upon the hills of Autumn, that are strewn with red and gold.

www.ksnh.org

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Arches of the Cumberland (Slade, Ky)
Meets informally, call President Dell Sasser for Details, 606-666-7521 ext. 73559, or 606-233-8938. Email: del.sasser@kttcs.edu

Falls of the Ohio (Louisville, Ky)
Meets every third Thrusday of each month except Jan, Jul, Aug & Dec at the Louisville Nature Center, 3745 Illinois Ave. Chapter President: Wayne Kimbel Email: waykim1@twc.com

Fall Conference October 2-5, 2014

Kenlake State Resort Park

Agenda on page 12

Falls of the Ohio Chapter

September 18th Regular Meeting Travis Brown, co-author of Pocket Guide to Eastern Streams and Pocket Guide to Eastern Wetlands will speak at our September meeting. I'm sure he'll have copies for sale of each.

September 27th Outing The Sept field trip to Muscatatuck is Sept 27. Everyone is supposed to meet at the Nature Center at Muscatatuck at 10 am. Visit to Muscatatuck National Wildlife Center with short side trips to see some historical covered bridges. This is always a winner.

Travis Brown works as a research biologist for WEST, Inc., where he conducts biological inventories, stream and wetland surveys, and endangered species surveys throughout the country. Travis and his wife, Shanda, have co-authored two books entitled Pocketguide to Eastern Streams and Pocketguide to Eastern Wetlands. Travis spends much of his time photographing and writing about a wide variety of plants and animals, but tends to specialize in freshwater ecosystems and rare plants and animals. To check out more of Travis's photography go to http://brownswildimages.photoshelter.com.

KSNH Welcomes New Members

LaDonna Carnahan	FO
Susan Baker	FO
Scott Arico	ST
Luc Dunoyer	ST

A VISIT WITH HUGH ARCHER, EXECUTIVE DIRECTOR

THE KENTUCKY NATURAL LANDS TRUST

By Wayne Kimbel

Recently, while sitting in my sun room trying to conjure up a short piece for the newsletter, I looked on the wall and…voila…it hit me. There on the wall in an old frame was a yellowed newspaper front page from my home town paper. It was a photo of Boy Scout Troop 31 gathered at the beginning of a trek at Philmont Scout Ranch in New Mexico in 1966. Crouched on the ground were the youngest members of the trek which included me and another young man who would later become familiar to many in his work to help save the natural parts of our state. His name is Hugh Archer, and he is now serving as the Executive Director of the Kentucky Natural Lands Trust. For the record, Hugh received the Naturalist of the Year award from KSNH in 1986.

Although we took different paths after our scouting days, I periodically would read or hear about Hugh's many accomplishments and successes in preserving our natural world. He has been a real champion for saving our Commonwealth's last and best places from exploitation.

To follow up on my quest, I contacted Hugh and we agreed to meet at his farm in Anderson County, Kentucky. This is far from a typical farm setting. For one, Hugh lives in a geodesic dome that is fashioned after the one touted by the late Buckminster Fuller. Looking for average; look elsewhere!

After a quick time spent catching up, Hugh and I settled down to talk about those matters of concern that he has dedicated his life to address for our natural world. It was clear that it would take volumes to capture all the details of his past and present work. There is a virtual sea of people, places, and initiatives that swirl around and are part of a discussion with Hugh.

Although his office is based in Berea, it's clear that the serious work is done statewide. In one year, Hugh put 30,000 miles on his car and never left the state. The Trust is THE premier non-governmental Kentucky based entity working to acquire lands that possess ecological significance. This requires a diligent examining of flora and fauna of a place, but also, and almost equally important, a determination as to whether a purchase is feasible and has impact to overall preservation efforts. As an attorney and Trust Executive, Hugh engages in direct negotiations with property owners and in the untangling of all types of property title quagmires; and there can be many. In our talks, I was struck by how much taking the "long view" and patience is critical in the Trust's efforts to assemble land and protect habitats. Hugh cited several examples of acquisitions that he had been pursuing for over 15 years.

The Trust's genesis was born out of the work of Hugh and others to protect Blanton Forest in Harlan County. Working with the sisters that had inherited the land that had never be logged, Hugh and his aides purchased the initial tract in 1995 using donated funds from several sources known to support these types of endeavors. It wasn't an overnight achievement but took multiple additional land purchases to reach the current stage, and they are still working on more. Recently, the Trust has been successful in striking a deal on 1200 more acres abutting the Forest. This is a return to their main area of interest along Pine Mountain. It also celebrates their 20 year anniversary.

It didn't take long for me to clearly see that Hugh has a deep love for Pine Mountain and with a flourish of pride he points to successes on maps that show the Trust's progress. Out of the more than 700 identified rare species in Kentucky, over 100 are found along the 120 miles that make up the Pine Mountain uplift. With parcel by parcel purchases, the ecosystem around Bad Branch, Blanton
Forest, and Laurel Fork have been brought into the Trust's realm of protection. Hugh also sits on the Board of Pine Mountain Settlement School and helps guide their programming efforts.
The mission of saving ecosystems is given a keen edge of realism by Hugh when he talks about the financial underpinnings of that mission. It quickly became clear to me that he is no stranger to the cold, hard facts of the need to be relentless in pursuit of donations, grants, and land gifts. He is forced to wear the hat of lawyer, negoti-

ator, and salesman while keeping an eye on the overall strategy and future of the Trust. One of the major figures aiding him is Marc Evans, the retired Nature Preserves ecologist who has been with him most days for the last 20 years, identifying the best sites, helping educate and charm the donors, along with setting up and managing KNLT. Also, it was Marc who discovered Blanton Forest in the first place.
The Trust has been blessed with solid donations in the past for restoration throughout the state. They will be launching a $6 million campaign for a number of critical projects for Pine Mountain as part of the 20 year anniversary. Christy Brown of Louisville and Tom Dupree, Sr. of Lexington have played key roles in this major campaign for land acquisition funding.

KNLT along with other land conservation groups will be focusing on establishing mitigation banks to establish funding through credits generated as they protect the headwaters of key Kentucky streams. Here's more information on mitigation banks. http://en.wikipedia.org/wiki/Mitigation_banking. There are partnership efforts underway for the protection of the upper Green River beyond areas already protected by The Nature Conservancy, WKU, KWA, and the Wild Rivers Program. However, the two most critical, on-going campaigns are for the purchase of a corridor to connect Ft. Knox with Bernheim and, of course, the assemblage of key large tracts on Pine Mountain. These two major efforts will reduce the fragmentation of natural habitats needed for many species. The take away message for me was Kentucky needs mitigation banks.

It was hard for me to follow the acronyms and funding mechanisms all too familiar to Hugh. It's clear that this complexity isn't always the most conducive for achieving the aim of protecting ecosystems and native landscape. However, he understands the strengths and weaknesses of the entities and the people within them to an amazing degree. He is able to harness resources by using state and federal regulations and incentives. An example is his work with the USFWS to establish the Indiana Bat Conservation Fund and the Aquatic Resources Fund in Kentucky. The Heritage Fund Board, for which Hugh is the state stewardship chair, helps fund the state agencies that partner with KNLT, and is now available for matching grants to NGOs. Some of the more prominent organized non-governmental groups with which he has been affiliated are: Kentucky Conservation Committee, Kentucky Waterways Alliance, Kentucky Woodland Owners Association, Mountain Association for Community Economic Development, Kentucky Watershed Watch, The Pine Mountain Settlement School, and Kentucky Land Trust Coalition.

Kentucky's scorecard and track record in the land management and protection arena has some lows. In a state that enjoys $9 billion in annual tourist expenditures, it owns less public land than others in the southeast region. The bulk of the "public land", sadly, is actually not Kentucky owned but consists of Ft. Campbell, Ft. Knox, the Daniel Boone National Forest, and Mammoth Cave holdings. As for the mitigation banks mentioned above, there are for example, 83 in the state of Georgia, but none in Kentucky. Our state forestry employee strength has gone from 246 when Hugh worked in state government to less than 140 today. Similar cuts throughout the state's land protection and management agencies place a growing burden on the NGO community involved in biodiversity and natural community protection.

The Trust, along with The Nature Conservancy, represents a really positive, results oriented effort aimed at using private resources to make things better. Hugh said that sometimes it takes outside pressure to brush apathy aside, such as with the fight against the Bluegrass Pipeline. It managed to coalesce groups that otherwise wouldn't really see much reason to work together. With a slight smile he said it was sort of Kentucky's "Arab Spring" regarding the environment.

It was clear from the beginning of my visit, that there was no way I could possibly capture all the blood, sweat, and tears that has gone into Hugh's work with the Kentucky Natural Land Trust. Of course, he hasn't done it alone, as he readily offers, "KNLT would not have survived without Donna Alexander as the office manager in Berea, and supportive hard working board members…", but he certainly has been at the forefront of key battles for preserving the last best places in Kentucky. Yes, he has worked closely with Thomas Barnes.

By not wearing a watch and with no clocks in sight, I had no idea that hours had slipped by and only the fading light made me aware that it was time for us to part company. Before saying adieu, I asked him what he thought in his background helped point him in the direction he is today. Without any hesitation, he said boy scouting and his time working in various summer camps. I had to smile about that one.

I was glad to spend some time with this old trail pal that is such a warrior for Kentucky and its natural places. One of his parting comments that he said with a chuckle was that he would probably be doing it until his dying day. As I waved and drove away, I knew there was no doubt about that.

Hugh Archer in front of his house Photos by Wayne Kimbel

If there was one cause that all members of the Society should support it is the Kentucky Natural Lands Trust

You can learn more by going to their web site at: http://www.knlt.org/

I would encourage you to consider becoming a member and supporting them.

NOTES FROM THE NATURE NUT
By W. H. (Wally) Roberts

"Summer at Shawnee"

During the first week of August, Karen and I, along with KSNH members Doris and Tom Mattingly, and my sister and brother-in-law Susie and Ron Torstrick, decided to visit Shawnee State Park in Ohio. It had been many years since all of us were able to explore at this time of the year due to conflicts with other commitments.

Fortunately, we were able to obtain Shawnee's special "Savvy Senior Discount" of $65.00 per night from Sunday night through Thursday night. The 60,000 acres Shawnee Forest has many forest service road opportunities to explore and all are in very good condition. This offers a great opportunity to explore the back country without serious hiking. Many areas are available for picnics and, if you don't want to make your own sandwiches, the lodge dining room or the Buckeye Dairy bar will pack very nice carryout picnic lunches for you.

The first week of August does not offer good birding opportunities, but we did have several good sightings including: Red-winged Blackbirds, Bluebirds, Indigo Buntings, Gray Catbirds, Yellow-breasted Chats, Cuckoos, Woodpeckers, Hawks, Hummingbirds, Belted Kingfishers, Field and Grasshopper Sparrows, Towhees, Vireos, and many more too numerous to name…not bad for the hottest time of the year.

The summer wildflowers were the highlights of our trip. We identified approximately 80 summer wildflowers, most from roadside observations. Three of the more prominent discoveries were: Canada Lily (Lilium canadense), Yellow Fringed Orchid (Platanthera ciliaris), and Fire Wheel or Blanket Flower (Gaillardia pulchella).

Many of you have visited Shawnee during the two conferences that KSNH held there the past few years. These conferences occurred during spring and fall; but don't forget about the summer flowering season at Shawnee.

Another great time to visit Shawnee is during the Christmas Holiday Season when the lodge is decorated with hundreds of Christmas trees and several hundred thousand lights, a truly beautiful and serene time. You may also find you and your traveling companions the only guests at the lodge during the week.

An additional advantage of Shawnee State Park is that it is only 160 miles from Louisville and your route traverses two scenic highways…one in Kentucky and one in Ohio. So the next time you are looking for a different summer natural history trip, you may want to consider Shawnee.

KSNH 2014 Research Grant Recipients

KSNH Grant Coordinator, Wally Roberts, is proud to announce the KSNH Grant recipients in the fields of Kentucky's natural history and biodiversity. The following four recipients each received a $500.00 grant to help with their research:

Scott Arico

Department of Biological Services, Eastern Kentucky University
"Characteristics, Use, and Possible Functions of the Songs of Female Eastern Bluebirds"

John C. Bourne

Department of Biological Sciences, Eastern Kentucky University
"Examining the Impacts of Valley Fills in Stream Ecosystems on Amphibian and Macroinvertabrate Communities in Eastern Kentucky"

Katheryn Watson

Department of Biological Sciences, Eastern Kentucky University
"Effect of Variation in Nestling Hunger Levels on the Begging Behavior of Nestlings and the Provisioning Behavior of American Kestrels"

Pavan Kumar Podapati

Department of Forestry, University of Kentucky
"Impacts of Dormant Season Application of Imazapic, a Pre and Post Emergent Herbicide, on Garlic Mustard (Alliaria petiolata)"

KSNH Makes $500.00 Donation to New Book on Olmstead Parks

The new book is entitled:
"The Olmstead Parks of Louisville, A Botanical Field Guide"

Text By: Pat Haragan
Photos By: Chris Bidwell and Susan Wilson

In order to continue funding KSNH Grants and other worthwhile publications and projects, new monies need to come in each year. KSNH is a not-for-profit, 501-C3 Corporation and all of your gifts are fully tax deductible under the tax code. Please remember KSNH when making donations and estate planning. You will get the most "bang for your buck" and you will be showing your good nature at the same time.

Loss of eastern hemlock affects peak flows after extreme storm events

August 12, 2014

USDA Forest Service - Southern Research Station
The loss of eastern hemlock could affect water yield and storm flow from forest watersheds in the southern Appalachians, according to a new study by U.S. Forest Service scientists at the Coweeta Hydrologic Laboratory (Coweeta) located in Otto, North Carolina. The article was just published online in the journal Ecohydrology.

Eastern hemlock trees have died throughout much of their range due to the hemlock woolly adelgid, an exotic invasive insect," said Steven Brantley, a post-doctoral researcher at Coweeta and lead author of the paper. "Though this insect has decimated whole stands of eastern hemlock along streams in the southern Appalachians, few studies have addressed the effects of this insect outbreak on landscape-level watershed processes such as stream flow."

Because of its dense evergreen foliage, eastern hemlock plays an important role in the water cycle of southern Appalachian forests, regulating stream flow year round. Although eastern hemlock rarely dominates the region's forests, the tree is considered a foundation species in the streamside areas called riparian zones. Previous research by the Coweeta scientists led them to suspect that the loss of eastern hemlock would cause stream flow to increase over the short-term, especially in the dormant fall/winter season, then decrease over the longer term, with small effects annually. They also thought that peak flows after storms would increase, especially in the dormant season.

For this study, Coweeta researchers used a paired watershed approach -- one watershed with a major hemlock component in the riparian forest area, the other reference watershed with very little -- to determine the effects of hemlock mortality on stream flow and peak flow following storms. Since hemlock woolly adelgid was first detected in 2003, all the eastern hemlock trees in both watersheds died, resulting in a loss of 26 percent of forest basal area (that area occupied by tree trunks and stems) in the riparian area of the first watershed compared to a 4 percent loss in the reference watershed riparian forest.

"Instead of finding that stream flow increased after hemlock mortality, we found no real change in any year after infestation," said Brantley. "We did find, however, that peak stream flow after the largest storm events increased by more than 20 percent." "The fact that hemlock loss didn't increase water yield in the short-term was due to the rapid growth response of cooccurring trees and shrubs in the riparian forests; and peak flows were likely higher after hemlock loss due to lower interception by the evergreen canopy in the riparian zone," said Brantley. "This latter finding suggests that riparian trees may play a disproportionally important role in regulating watershed processes than trees that aren't adjacent to the riparian zone."
"It also has implications for the more extreme rain events predicted under climate change," he added. "Losing foundation species in forested riparian zones could amplify the effects of altered precipitation regimes."

Story Source:
The above story is based on materials provided by USDA Forest Service - Southern Research Station. Note: Materials may be edited for content and length.
Journal Reference:
1. Tanya M. Doody, Richard G. Benyon. Direct measurement of groundwater uptake through tree roots in a cave. Ecohydrology, 2011; 4 (5): 644 DOI: 10.1002/eco.152
Cite This Page:
USDA Forest Service - Southern Research Station. "Loss of eastern hemlock affects peak flows after extreme storm
events." ScienceDaily. ScienceDaily, 12 August 2014.
<www.sciencedaily.com/releases/2014/08/140812122331.htm>.

Songbirds: Juveniles delay departure, make frequent stopovers during first migration

Date: August 20, 2014
Source: York University

Juvenile songbirds on spring migration travel from overwintering sites in the tropics to breeding destinations thousands of kilometres away with no prior experience to guide them. Now, a new study out of York University has tracked these "student pilots" on their first long-haul flight
and found significant differences between the timing of juvenile migration and that of experienced adults.
"Juveniles departed later from their overwinter sites in Belize and Costa Rica relative to adults, and they became progressively later as they moved northwards because they stopped for more days," says York U researcher Emily McKinnon, the study's lead author. "By the time they arrived at breeding sites they
were almost 2 weeks behind the adults, and overall their migration took 50 per cent longer in terms of days spent traveling."
The study, published in PLOS ONE, tracked juvenile wood thrushes from Belize and Costa Rica all the way up into the US and Canada. The birds were fitted with tiny geolocator "backpacks" to track their route, and researchers found that even though the juvenile birds took 50 per cent longer to reach their destination, they travelled a similar migration path as their adult counterparts, including the dangerous open-water crossing of the Gulf of Mexico -- a non-stop flight covering 1000km.
To find out why the young birds were departing at a later time than the adult wood thrushes, researchers compared the health of young birds and adults in late winter in Belize before they departed on migration.
"We found no age-related differences in the condition of the birds, although juvenile birds had shorter wings, which could lead to less efficient flight," says study co-author Kevin Fraser. "We think the big differences we found in spring migration timing might be a result of an age-related genetic program. If you are an inexperienced young bird, it could actually be better to arrive later at breeding sites if you can't compete with the adults for territories. Juvenile birds' late migration could have evolved to help them avoid the worst of the competition for breeding sites in early spring and arrive after the dust has settled and the adults have claimed the best territories. Why risk arriving early if you can't compete with the adults anyway?"

The researchers say these findings are the first step towards understanding the "black box" of juvenile songbird migration, and point to the dangers that are inherent in a songbird's first migratory flight.

"Our findings illuminate a little studied part of the life cycle of migratory birds -- the development of spring migration behaviour -- that has never been examined in the wild before," says McKinnon. "The 50 per cent longer migration duration for juveniles, combined with a greater number of stopover sites, puts this age class at higher risk of mortality. Since the wood thrush is a threatened species in Canada, and declining throughout its range, a good step in conserving this species would be to identify and protect spring migration stopover sites."

Story Source: The above story is based on materials provided by York University. Note: Materials may be edited for content and length.

Journal Reference: 1. Emily A. McKinnon, Kevin C. Fraser, Calandra Q. Stanley, Bridget J. M. Stutchbury. Tracking from the Tropics Reveals Behaviour of Juvenile Songbirds on Their First Spring Migration. PLoS ONE, 2014; 9 (8): e105605 DOI: 10.1371/journal.pone.0105605

York University. "Songbirds: Juveniles delay departure, make frequent stopovers during first migration." ScienceDaily. ScienceDaily, 20 August 2014. <www.sciencedaily.com/releases/2014/08/140820164702.htm>.

ANIMAL TRIVIA

Our annual visit(s) to the KY State Fair this year provided me with lots of nature facts. I thought I'd share some definitions with our KSNH family. The information for the quiz on birds comes from Birds and Blooms contributor Sally Roth. Enjoy.

Chris Bidwell

MATCHING – FARM ANIMALS

1) gilt _____
2) barrow _____
3) boar _____
4) broiler/fryer _____
5) pullet _____
6) cockerel _____
7) steer _____
8) kit _____
9) wether _____
10) trip _____
11) doeling _____
12) kid _____
13) colt _____
14) filly _____
15) foal _____
16) mare _____
17) stallion _____
18) gelding _____
19) brood _____
20) poultry _____

A) herd of goats
B) baby turkey
C) young non-sexually active rabbit
D) male horse less than 4 years old
E) male horse greater than 4 years old
F) adult castrated sheep or goat
G) goat less than 1 year old
H) female horse greater than 4 years old
I) rooster less than 1 year old
J) virgin swine
K) male porcine that can reproduce
L) young castrated bovine
M) hen less than 12 weeks – bred for meat production
N) group of chickens
O) castrated male horse
P) baby rabbit
Q) female chicken > 12 weeks, < 1 year – meat and egg production
R) horse, male or female, less than 1 year old
S) female horse less than 4 years old
T) castrated swine

"FASTEST BIRDS" of North and South America

1) Fastest nest builders – as quick as just a few hours, as these birds may/can raise 6 broods per year – each in a new nest

   A) house sparrow

   B) house wren

   C) mourning dove

   D) black-capped chickadee

2) Fastest to hatch

   A) house wren

   B) hummingbird

   C) robin

   D) cardinal

3) Fastest to leave the nest after hatching

   A) robin

   B) most precocious birds that are born with fuzzy feathers – killdeer, quail, grouse, turkey

   C) starling

   D) hummingbird

4) Fastest – first to sing in the morning (singing triggered by only 0.01 candle power light intensity)

   A) cardinal

   B) barred owl

   C) mockingbird

   D) robin

5) Fastest to hand tame

   A) rose-breasted grosbeak

   B) black-capped chickadee

   C) tufted titmouse

   D) white-breasted nuthatcher

6) Fastest bug catcher

   A) swallows, swifts, purple martins

   B) woodpeckers

   C) eastern bluebirds

D) fly catchers

7) Fastest metabolism – only the shrew has higher metabolism

A) eastern kingbird

B) barn swallow

C) Carolina wren

D) hummingbirds

8) Fastest/longest New World warbler migratory – 3000 miles (1900 mi non-stop over Atlantic – 88 hrs)

A) Connecticut warbler

B) Kentucky warbler

C) blackpoll warbler

D) Canadian warbler

9) Fastest wingbeat – 50 times per second

A) bee hummingbird of Cuba

B) ruby-throated hummingbird

C) giant hummingbird of the Andes

D) Anna's hummingbird

10) Fastest bird on land – 26 mph

A) rhea

B) Darwin's Nothura

C) Patagonian Tinamou

D) greater roadrunner

Answers

Matching – 1-j; 2-t; 3-k; 4-m; 5-q; 6-i; 7-l; 8-p; 9-f; 10-a; 11-c; 12-g; 13-d; 14-s; 15-r; 16-h; 17-e; 18-o; 19-n; 20-b

Fastest birds – 1-c; 2-a; 3-b; 4-d; 5-b; 6-a; 7-d; 8-c; 9-b; 10-d

KSNH FALL CONFERENCE – KENLAKE STATE RESORT PARK October 2-5, 2014

ALL TRIPS CENTRAL TIME ZONE

All meals on your own. All trips leave from Lodge unless otherwise stated. Note departure times and carpool when possible. Take cameras, water, binoculars, and tick spray.

Pat Meyer will be having registration at 6:30 on Thursday night as well as Friday night at 6:30 both at the Lodge. Also, Chris will have a short meeting at 7 pm on Thursday night to explain the outings and field trips on Friday.

Field Trip Activity Ratings:

Easy – short hikes –flat/little slope

Moderate – hiking at a comfortable pace on generally level terrain; trails or no trails. Must be able to negotiate uneven surfaces and get across occasional logs.

EARLY BIRD TRIP – Thursday, Oct. 2 2 pm – 4 pm

Thursday, Oct. 2	**Woodland Nature Center**	**EASY**
Leave Lodge 1:30 pm	**Leader: Aviva Yasgur,** Group Program Coordinator	
	"Backyard Safari" program – tour of Nature Center's flora and animals: owls,	
	fallow deer, red wolf, and bald eagle	
	Choice of several **EASY** trails to explore	
	$3.00 per person	
Friday, Oct. 3	**Trace – South, Driving Tour** (47 miles one way)	**EASY**
9 am – 3 pm	**Leader: Berl Meyer**	
	Driving tour includes: Home Place **($3.00 per person)**, Great Western Iron	
	Furnace ruin, Fort Donelson Civil War Historic Site, Cross Creek NWR	
	Lunch in Dover, TN	
9 am – noon	**New Central Hardwood Scenic Trail – drive time 30 mins.**	**EASY**
Leave Lodge 8:30	**Leader: Travis Brown**	
	2 miles round trip	
	LUNCH 12:30 ON YOUR OWN	
1:30 pm – 2:30pm	**CHEROKEE STATE PARK – Power Point Presentation**	**EASY**
	Leader: Tammy Nanney	
	In Lodge Conference Room	
1:30pm – 4:30 pm	**HEMATITE TRAIL**	**MOSTLY EASY**
Leave Lodge 1 pm	**Leader: Dr. Dwayne Estes**	
	2 miles round trip	

1:30 pm – 4:30pm **ENERGY LAKE CANOE TRIP**

Leave Lodge 1:00pm **Meet staff at Energy Lake Campground**

$25.00 per Canoe / 3 people per canoe

DINNER ON YOUR OWN

7 pm **EVENING PROGRAM – Meet in Lodge Conference Room**

Welcome and Introduction – Chris Bidwell

Recap activities of Thursday and Friday

SPEAKER: Dr. Nancy Dawson, CSP

Cherokee State Park

Saturday, Oct.4 **Terrapin Creek State Nature Preserve – in Graves County**

9am – noon **Leader: Travis Brown** **EASY TO MODERATE**

Leave Lodge 8:30am Drive Time – 30 minutes

Wear hiking boots – may need hiking stick approximately 1 mile

9am – 4 pm **Trace – North, Driving Tour** **EASY**

Leader: Chris Bidwell

Will visit: Golden Pond Visitor Center and Planetarium

Elk and Bison Range – get tokens at Golden Pond Visitor Center **($5 per carload)**

Duncan Lake – eagle viewing

Patti's Grand Rivers for lunch

Smith's Bay – eagle viewing

Woodland Nature Center **($3 per person)**

Bring spotting scopes, binoculars – And an appetite for Patti's!!!

LUNCH ON YOUR OWN Noon to 1:30

Saturday, Oct. 4Clark's River NWR **EASY**

1:30pm – 4:30pm **Leader: Stacey Hayden**

Leave Lodge 1 pm Drive time – approximately 15 minutes, meet Stacey at Headquarters

Hiking distance - approximately 2 miles

7 pm **EVENING PROGRAM – Meet in Lodge Conference Room**

Welcome and Introduction – Chris Bidwell

Recap Saturday activities

KSNH Pictures – **Susan Wilson**

	Door Prizes – **Cindy Payne**
	Board Meeting – All Are Welcome!!!
Sunday, Oct. 5	**Mantle Rock**
11 am	**Leaders: Margie and Ken Conard**
Leave Lodge 9 am	This is an extra road trip on your way home
	Approximately 60 miles to Mantle Rock
	1 mile **EASY** trail at Mantle Rock

HAVE A SAFE TRIP HOME!

For On Your Own Activities, Trip Leaders and Speakers download the agenda PDF from our website <www.ksnh.org>

To Join the Kentucky Society of Natural History
Go to our website and click on the membership tab.

www.ksnh.org

Send your articles to Dave Luzader
for our future newsletters
(dluzader@twc.com)