

The Lady-Slipper

Kentucky Native Plant Society

Number 16:3

Late Summer 2001

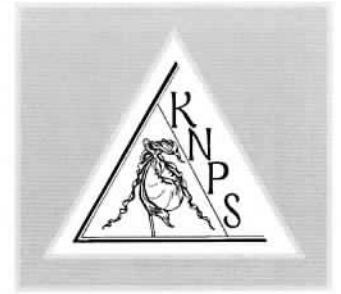


Photo by Renée Slaughter

Rescue of Eggert's Sunflower Planned at Mammoth Cave National Park

by Charlie Lapham and Randy Seymour

MAMMOTH CAVE NATIONAL PARK has asked the Kentucky Native Plant Society for help in rescuing a population of *Helianthus eggertii* on US 70 near the entrance to the park.

Eggert's sunflower is listed as endangered in Kentucky by the Kentucky State Nature Preserves Commission, but whatever legal protection it enjoys comes from its listing by the US Fish and Wildlife Service as a "Threatened" species under the Endangered Species Act. At the time of its federal listing in 1997, Eggert's sunflower was known only from small populations in Tennessee, Alabama, and five counties in Kentucky.

There are plans to widen US 70 during the next year, and this work will demolish one population of Eggert's sunflower that lies in the path of the construction. According to the park service, the decision is final, and no adjustment in roadbuilding can be made that will save the population. Therefore, they are asking for assistance from KNPS and others to mount a rescue effort to hand dig the plants and move them to other sites in the park that will be protected.

Many of us were disappointed that the best we seem to be willing to do for a federally threatened species in a national park and international biosphere reserve is to dig

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Eggert's Sunflower,
Helianthus eggertii.

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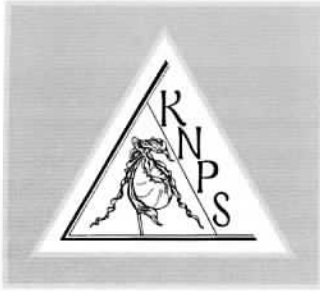
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Rescue of Eggert's Sunflower at MCNP (Continued) . . .

it up so the highway folks can bulldoze the habitat. This raises serious questions about what is really meant by "protection" of a rare species. Moving plants may be the highway folks' favorite solution, but it's usually a last resort from an environmental standpoint.

HOWEVER, there are special circumstances in this case. A lot more than *Helianthus eggertii* is at risk. Here is our current estimate, based on extensive surveys conducted by the second author whose inventory divided Mammoth Cave National Park into 100 meter square plots with each plot checked individually. Of the 1,210 taxa known from the park (of which 344 were added during this survey), 208 can no longer be found. Thirty-eight of these missing taxa may be questionable data leaving 170 that are apparently lost. Of the 1,002 species left, 191 are known from three or fewer locations in the park and are considered in danger. There were 27 federally or state listed taxa in the park, of which 10 appear to have been lost so far. We believe that 50 to 100 species have been extirpated from the park, and more extirpations will likely be discovered with additional surveys. It is reasonable to say most of the problem with the lost taxa is the failure of the park to maintain open area habitat.

Helianthus eggertii is one of the victims of this loss of open area habitat. In the last five years the population of Eggert's sunflower at the US 70 site has declined from 3,000 to about 1,000 plants—a 66% loss. The plants are suffering primarily from an encroachment of canopy species—they do not do well in shade. The park service, however, is not convinced of the need to open up the canopy to allow the species to maintain its population. If the sunflowers were left in place and the road not built through their habitat, the encroaching canopy might still promote losses of 66% every five years. That would leave only 300-odd plants in 2006 and a few dozen in 20 years.

In light of these estimates, we now agree that moving these plants is the best option. Hopefully the plants will do well in their new site and, with proper management, will contribute to the permanence of the species in the park. In addition, we urge Mammoth Cave to investigate the need of canopy removal at other sites within the park where Eggert's sunflower continues to survive.

It is quite clear from work on other

Eggert's sunflower sites managed by The Nature Conservancy and the state Nature Preserves Commission, as well as on the second author's farm, that this taxon benefits considerably from controlled burns. This fall, after years of study, Mammoth Cave National Park is planning to do its first ever controlled burn at a site that includes a small Eggert's sunflower population. Some Eggert's sites are better suited for controlled burns than others. The US 70 site, for example, is not one of the better ones. There are residences almost directly across the road, and burns create a lot of smoke under the best of circumstances.

While *H. eggertii* is globally rare, it can be locally frequent. About 15 separate populations have been identified within Mammoth Cave National Park. Some of these are larger than the population left at the US 70 site. If the US 70 population can be successfully rescued, and the other populations protected, then it is imperative that a management plan, likely involving controlled burns, be developed for this taxon. In addition, management plans need to be developed for other rare taxa in the park, to avoid any further losses of biodiversity.

In the last couple of years there have been welcome signs that Mammoth Cave is moving toward a better management strategy. There is a serious interest in controlling invasives. After years of study, they plan to do their first controlled burn this fall. They are in the process of hiring their first botanist. They are active in reducing poaching of native plants from the park, and are working to restore American elm, American chestnut and butternut trees to the park. The park's new director of research came to Wildflower Weekend at Natural Bridge State Park to address the KNPS this spring and to invite us to participate in mapping both invasive and medicinal species at Mammoth Cave.

It appears in this case, that encouraging better management practices and working with Mammoth Cave to help rescue the Eggert's sunflowers on US 70 will be more productive than confrontation. The relocation plan hasn't been fully approved yet, and other alternatives may still be considered, but if it comes to relocation, the KNPS will be there to help. If the US 70 Eggert's sunflowers are not relocated, an improved management plan for this particular population should be a very high priority.

SIGN UP NOW to HELP PRESERVE EGGERT'S SUNFLOWER at Mammoth Cave National Park

Helianthus eggertii

SEED COLLECTION at Mammoth Cave National Park September 8, 2001 – 9:00 am CST —

There will be a work session to collect seed of the federally threatened *Helianthus eggertii* at Mammoth Cave National Park at 9:00 am CST on September 8. Call Charlie Lapham to sign up at 270-646-4060.

Please save old stockings to put over the flower heads to keep the seed from falling on the ground as it ripens. There are several hundred plants involved, and each stocking means one less cloth bag will have to be made from scrap material. Those who can't come may send old stockings to Charlie Lapham, 16 Winn School Rd., Glasgow, KY 42141—Really!!

Helianthus eggertii

RELOCATION at Mammoth Cave National Park October 27, 2001 – 9:00 am CST —

As those of you who attended the spring KNPS meeting know, our society has been asked to help relocate *Helianthus eggertii* from a roadside in Mammoth Cave National Park to allow the site to be used in a US 70 road widening project.

Normally plant relocation is not a popular choice in matters like this, but in this case, Randy Seymour reports that 2/3 of the Eggert's sunflower population at this particular site has already been lost in the last five years, and leaving the plants where they are is not without hazards itself. Controlled burns benefit this species, but this US 70 location is not one of the better places to attempt a controlled burn.

The approval of the relocation plan is still in progress, but in case it does have to be done, we have decided to help. The relocation is tentatively scheduled for October 27, 2001. Volunteers should bring a shovel and poison ivy protection. Help from members who don't get poison ivy would be especially appreciated. Call Charlie Lapham at 270-646-4060 to sign up.

If necessary, sleeping facilities with indoor plumbing, showers, dining area, and a kitchen are available if we need to sleep over. Bring sleeping bags. For those who don't bring food, you can pig out at the famous Pig Diner in Pig, KY. Pig has no signs at the edge of town because they get stolen too fast. We'll give you directions, and the food is decent.

This event could be postponed or the relocation plan might not be approved. Check www.knps.org for the latest details, or call Charlie Lapham before you make the trip.



Toxic Native Non-flowering Vascular Plants of Kentucky

by Roy Smith
Livestock Disease Diagnostic Center,
Veterinary Science Department,
University of Kentucky.

THE NON-FLOWERING VASCULAR PLANTS include the ferns and fern allies, which are seedless, and the conifers, which have naked seeds. These kinds of vascular plants have existed on the Earth since before the end of the Triassic period about 195 million years ago, at time when the continents formed a single landmass named Pangea. Our coal deposits in Kentucky are formed mostly from the plant bodies of these kinds of plants. Most have become extinct, but today there are about 80 species of ferns and fern allies native to Kentucky, and 10 native species of conifer. Of these about 90 species, the following are considered most toxic.

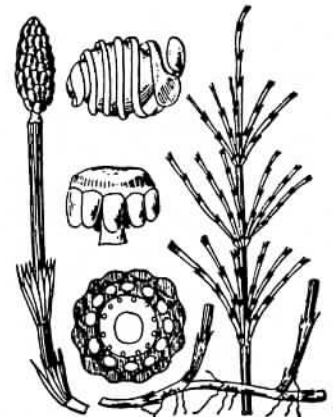
Equisetum arvense L., or horsetail, is common in moist places such as ditches or the banks of streams or lakes across Kentucky. The plant is rich in thiaminase, an enzyme that destroys thiamine, an essential amino acid. Only monogastric

animals like horses are poisoned by *E. arvense*. The animals become increasingly unthrifty and have difficulty breathing. In extreme cases, death occurs. Ruminants are not poisoned as the rumen microorganisms destroy the thiaminase before it can destroy thiamine.

Onoclea sensibilis L., or sensitive fern, is common in wetlands of Kentucky. It is often found in wet fields, and may become mixed in hay. Horses that ingest sensitive fern may become unsteady and eventually collapse. The toxins in sensitive fern affect liver function and may cause paralysis of the alimentary canal.

Pteridium aquilinum (L.) Kuhn, or bracken fern, is common in acid woodlands and high pastures in Kentucky. Bracken fern's principal toxin has not been categorized. If this plant is a major component of the diet as could happen to cattle in a pasture with lots of it and little else growing there, poisonings can occur. Cattle become emaciated as if starving. Blood eventually appears in the feces. Death occurs after several days have elapsed.

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Horsetail

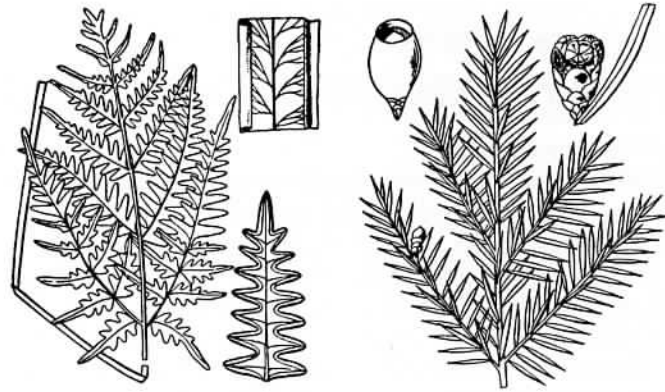


Sensitive Fern

Toxic Native Non-flowering Vascular Plants of Kentucky (Continued)

Taxus canadensis Marsh., or Canadian yew, is considered rare in Kentucky. It is restricted to eastern portions of the state where it can be found along mesic stream-banks and on cliffs. Studies have shown that Canadian yew does contain minor amounts of taxine in its wood, bark, leaves, and seeds. Taxine is a highly toxic alkaloid. Large amounts of it cause the heartbeat to be slowed and finally stopped.

The Eurasian species of *Taxus* are apparently much more toxic than the American species, and they are the yews that are often found in cultivation throughout Kentucky. Cattle, sheep, horses, and goats have been poisoned by browsing their foliage and twigs. The seeds with their bright red fleshy coverings are also attractive to children. Although some references question the toxicity of the red portion, others state that *all* parts of the yews are to be avoided!



Bracken Fern

Canadian Yew

Other conifers – Species of pine (*Pinus*), red cedar (*Juniperus*), and white cedar (*Thuja*) are seldom eaten by humans or livestock. However, if fed upon heavily and exclusively, these plants can produce toxic symptoms, including abortions in cattle.



Illus. Flora of the Northern U.S.... / Britton & Brown / 1913

A BOOK REVIEW: Studies in the History of North American Botany

by David D. Taylor, Botanist
Daniel Boone National Forest

I JUST RECEIVED A NEW BOOK: *Emanuel D. Rudolph's Studies in the History of North American Botany* edited by Ronald L. Stuckey and William R. Burk. This is an interesting volume comprised of previously unpublished works of the late E.D. Rudolph whose botanical career included 37 years of teaching at Wellesley College and at The Ohio State University as well as the first extensive research on the vegetation of Antarctica and additional lichenological studies in the Arctic tundra of Alaska.

The 38 papers collected in this book, however, mostly arose from Rudolph's broad interests in the history of nineteenth and early twentieth century biology and botany. The editors have organized them into the following sections: Botany in Textbooks, Botany in Children's Books, Botanical

Teaching, Botanical Educators, Botanical Illustration, Women in American Botany, Writing Shaw's Garden History, and Writing Botanical History. An appendix of Dr. Rudolph's Wellesley College talks on the relationships between science and religion is also included.

Altogether, these papers provide insight for understanding the influence of one generation of botanists on the next, and on the view towards science in general. The illustrations include photographs and drawings of E.D. Rudolph, notables from botanical history, pertinent passages from significant botanical works, and covers or title pages from many botanical volumes.

As a parent of young children and former college instructor, the sections on Botany in Children's Books and Botanical Teaching/Textbooks are especially amusing and alarming. One must wonder how much myth is still being taught in grade school, or possibly at higher levels, and what effect that has on our ability to interact with the public regarding natural history and processes.

Stuckey, R.L. and W.R. Burk, eds. *Emanuel D. Rudolph's Studies in the History of North American Botany*. 2000. Sida, Botanical Miscellany, No. 19. Botanical Research Institute of Texas. Fort Worth, Texas. 376 pp. Illustr., b&w and color. \$45.00, paperback plus \$4.50 S&H.



Frontispiece to *The American Forest: Or, Uncle Philip's Conversations with the Children about the Trees of North America* (1840), courtesy of Sida, Botanical Miscellany (BRIT); from the Rare Books and Manuscripts Library, The Ohio State University.

KENTUCKY'S WETLANDS — Part II

by Landon E. McKinney

AS WE BEGIN THE SECOND PART of this series of articles on wetlands, I'd like to focus on the functions and values of wetlands. Let's think in terms of features and benefits. A wetland's functions may be thought of as its features or characteristics. Essentially, these features are the chemical, physical, and biological processes that may occur in a wet environment. Wetland values may be thought of as the benefits of those features or functions.

For instance, a wetland can act as a storage unit for surface water and/or precipitation. This would be a feature or function. The benefit or value of this feature could be a reduction of flooding potential after a heavy rain event.

Wetlands are natural water filters. This important feature could never be fully duplicated by man's conventional systems and certainly not at a comparable cost. Filtering the water that may ultimately end up in our lakes and rivers provides the benefit of improving water quality. This not only benefits mankind but helps insure the maintenance of healthy populations of aquatic organisms.

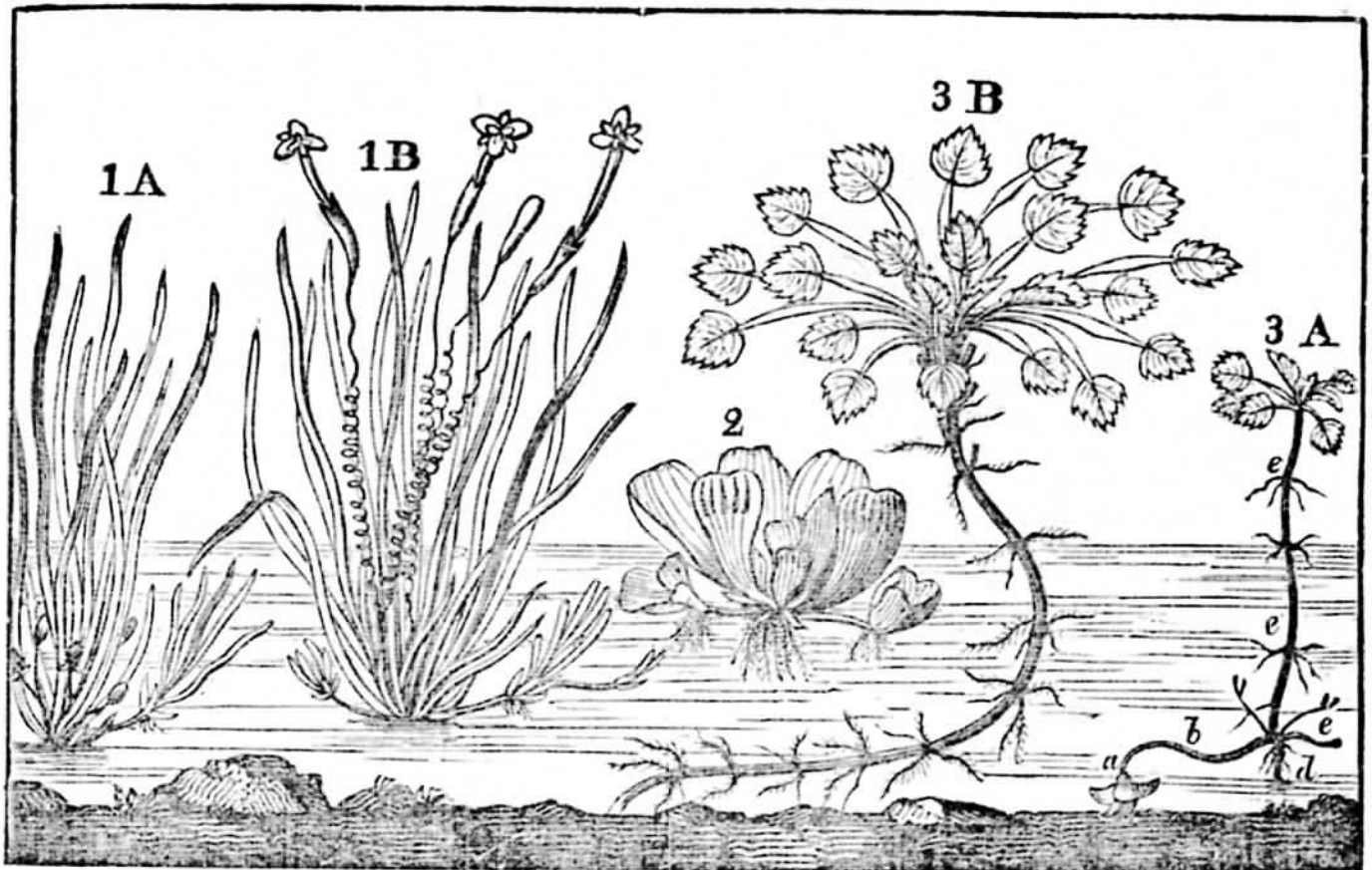
Wetlands provide usable habitat for a wide variety of organisms. Whether for homes, breeding grounds, rest stops, or refuge from predators, wetlands are dramatically instrumental in maintaining the health and well being of both aquatic and terrestrial organisms.

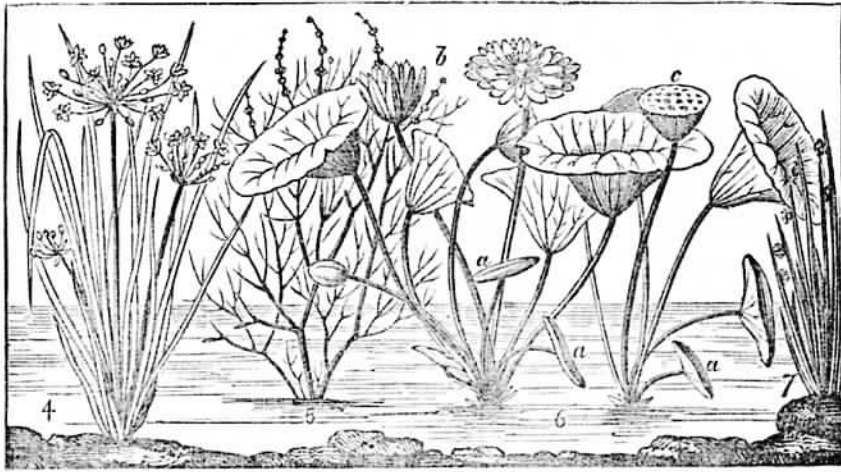
Now, as an avid KNPS member, a discussion of wetland features and benefits would be woefully incomplete if I did not touch on what I believe to be the greatest function of wetlands. Yes, fellow members, wetlands provide homes for plants, most of which could fade into extinction were it not for the availability of wetlands. I often look at wetlands and gauge their importance by the diversity of plant life that they harbor.

While any given wetland, regardless of size, can display a diverse flora, I've found wet meadows to often be some of the most diverse wet communities I see. Wet meadows are open, wet communities where standing water does not occur and, in fact, the soils are seldom saturated. They are usually relatively small in size and often

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Some North American native and introduced aquatic and wetland plants from *Familiar Lectures on Botany* by Mrs. Lincoln Phelps, 1866: 1) Tapegrass (*Vallisneria spiralis*); 2) one of "the Duckweed tribe" (*Pista stratiotes*); 3) Waternut (*Trapa natans*). Species are not all drawn to the same scale.





Other North American native and introduced aquatic and wetland plants from *Familiar Lectures on Botany* by Mrs. Lincoln Phelps, 1866, include: 4) Flowering Rush (*Butomus umbellatus*); 5) Flat Stem Pondweed (*Potamogeton compressus*); 6) Indian Lotus (*Nelumbo nucifera*); 7) Staff Rush (*Juncus conglomeratus*). Species are not all drawn to the same scale.

Kentucky's Wetlands — Part II (Continued)

harbor a variety of herbaceous species that prefer not-so-wet conditions. Wet meadows might be overlooked as wetlands if it were not for the presence of wetland plants. As wetlands, wet meadows often do not provide much, if any, other feature or function. However, from a biodiversity standpoint, they can harbor a tremendous variety of plant species, especially for their size. I've encountered wet meadows throughout much of the eastern United States and I am still amazed at the floristic diversity they often display.

Regardless of the level of function any given wetland can provide, they are extremely important, and we have much less wetland acreage now than we did during pre-settlement times. As this country began to develop, wetlands were considered an enormous waste of land. Early on, agricultural development accounted for most of the wetland loss. Since 1985, commercial development accounts for much of the loss. In some states like California, Iowa, and Ohio, current estimates suggest that approximately 90% of wetland acreage has been lost.

Ironically, while it is estimated that the southeastern United States contains approximately 47% of the remaining wetlands in the contiguous part of our country, the southeast has actually lost the greatest amount of wetlands. In Kentucky, most estimates suggest a loss of approximately 80% of the state's wetland acreage. In fact, Kentucky ranks last in the southeast for wetland acreage that remains. This is partially due to Kentucky's lack of coastal waters. However, neither Tennessee nor Arkansas have coastal waters and they both rank higher than Kentucky for remaining wetland acreage.

While wetlands are essentially our only federally regulated natural community and are thus afforded some level of protection, do not be misled into thinking that our current wetland acreage will remain unchanged and unharmed. Wetlands are still allowed to be impacted or destroyed. To compensate for impacts or destruction of wetlands, the law requires, through mitigation, the restoration or creation of compensatory wetlands.

Is this a viable option? Does restoration and/or creation of new wetlands really work as a substitute for preserving natural wetlands? Stay tuned when next we discuss the myths and reality of wetland restoration and creation...



TROPICAL DENDROLOGY with Some Notes on the

by Ronald Jones
Eastern Kentucky University

I HAVE JUST RETURNED from a two-week course in Costa Rica—"Tropical Dendrology." For a change, I was a student and not the instructor, and I thoroughly enjoyed the experience.

There were 13 students in the class from five different countries—one each from Venezuela, Colombia, Honduras, and Canada, and nine from the U.S. The class was taught by Dr. Humberto Jimenez, through the Tropical Science Center in San José. The course has been taught twice a year for the last several years, a Spanish version in March and an English version in June–July. Three other instructors, specialists in different regions of the country, were also involved in the class.

The main purpose of the class was to get the student familiar with tropical tree families by learning their special identifying features. The instructors took the class into the field as much as possible, discussing family and often generic features. We were taught to prepare a "Matrix" from our notes—tables of families based on overall leaf similarity, i.e., a table for all families with opposite, simple, and stipulate leaves, etc. After discussing a family and writing it up in our notes, we were quizzed repeatedly with new specimens—and very soon we were getting many of the families correct, and often the genus correct also. This "Matrix" method has been developed to enable students to identify the major families in the Neotropics, and it works!

Obviously, in a country in which there are more than 1,500 species of trees in about 100 families, it is possible to cover only a small percentage of the species in a 2-week period. We covered about 50 families and 100 genera during the class. However, the instructors targeted the larger families and genera to introduce to the class. Many students who have finished the class, and returned to the tropics, have reported that they could correctly identify families about 70–80% of the time.

Since so many tropical tree genera and species from entirely different families have very similar foliage, identifying families of trees correctly is a big step in getting successful identifications of genera and species. Once the family is identified, the next step is using a taxonomic key (of which many are now available in Spanish or English) to determine the genus and species.

I feel that I learned a great deal of new

BIOLOGY IN COSTA RICA in the Woody Floras of Kentucky and Costa Rica



Photo by Heidi Hopper

information in the class and recommend the class highly. I had already had an introduction to tropical plants last summer in Ecuador, and was able to build on that experience by taking the Costa Rica class.

SOME SIMILARITIES AND DIFFERENCES BETWEEN THE WOODY FLORAS OF COSTA RICA AND KENTUCKY

Costa Rica is located in Central America between Nicaragua at its northern border and Panama at its southern border. With the Pacific Ocean on its western shore and the Caribbean Sea on the east, it is only 135 miles across at its widest point. It occupies a total of about 19,730 square miles which makes it slightly smaller than the state of West Virginia. Four mountain ranges divide Costa Rica, with the peaks reaching 5,500

feet above sea level in the north at Monteverde, and 12,000 feet in the south near the Panama border.

About 3.5 million people live in Costa Rica, mostly in the central valley area. Costa Rica is notable for having no army, one of the highest literacy rates in the Americas, and an average life span that surpasses that of the U.S. Furthermore, I found the people are very friendly toward Americans, and many speak English!

Several major ecosystems occur in this small country: paramo—high elevation vegetation of unusual small, succulent herbs, similar to that of the Andes; cloud forests; rain forests; dry forests; and mangroves. These forest ecosystems can be further divided into a number of other categories, such as tropical, premontane, and montane.

(Continued on page 8)

A break in the clouds provides a vista across the Monteverde Cloud Forest Preserve. The preserve straddles the continental divide in western Costa Rica and extends down both the Caribbean and Pacific slopes. Its six vegetational communities, or life zones, support an exceptional diversity of plants and animals including more species of trees than in all of North America.

TROPICAL DENDROLOGY IN COSTA RICA... (Continued)

All of this habitat diversity has led to an incredible diversity of Costa Rican plants and animals. For example, the number of flowering plant species exceeds 10,000. This number compares with about 3,000 flowering plant species in Kentucky, and about 20,000 in all of North America.

As for tree species, the numbers in Costa Rica exceed 1,500, while there are only about 180 species of trees in Kentucky, 300 in the southeastern U.S., and about 650 in all of North America. One of the areas that we visited, the Monteverde Cloud Forest Preserve, is an area of only 10,500 hectares (26,000 acres), but a recent survey found over 700 species of trees—more than in all of North America!

The table at the right, based on a sample of seven major Costa Rican sites by Janzen et al. (1983), compares the composition of the major families of trees in Costa Rica with the same families in Kentucky. It illustrates that while there are connections, there are many differences in the tree floras of these regions. Many plant families that are all, or mostly herbaceous in Kentucky have many tree species in Costa Rica. Also, these families are often much more diverse in Costa Rica than in Kentucky.

There are some notable tree families in Kentucky that are absent, or nearly so, from the Costa Rican tree flora: Aceraceae, Betulaceae (except a species of *Alnus*), Juglandaceae (except an opposite-leaved species), and Salicaceae. Other Costa Rican tree facts notable to a Kentuckian include: there are Costa Rican species of elm (*Ulmus*) and hackberry (*Celtis*), there are tree species in the Violaceae (!), there is a species of persimmon (*Diospyros*), and there are many tree potatoes (Solanaceae) and composites (Asteraceae).

The really tough groups of Costa Rican trees to identify are the resinous, alternate, compound leaved groups in the Anacardiaceae, Burseraceae, Simaroubaceae, and Meliaceae, although I eventually began to get them right over 50% of the time. Another hard group are those genera with alternate, serrate leaves. If you can't figure these out, the rule of thumb is: try the Euphorbiaceae—an extremely variable family in the tropics. Learning to identify the most common families is not at all difficult, and as you tour the country you see a lot of the bean groups—Mimosaceae, Fabaceae, and

Caesalpiniaceae, as well as Annonaceae, Lauraceae, Bombacaceae, Moraceae, Melastomataceae, Rubiaceae, and Tiliaceae.

There are many tricks and tips that the local botanists have learned in working with this extremely rich tree flora, and these are what we were taught in this intensive two weeks. We worked hard, and learned a great deal. The students in the class were a great group from all walks of life and were really fun to be around. We were all a little sad to have to say goodbye after getting to know each other so well.

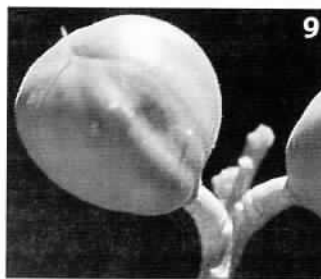
Although many of the Costa Rican tree families were completely unfamiliar to me,



Composition of the major families of trees in Costa Rica compared with the same families in Kentucky

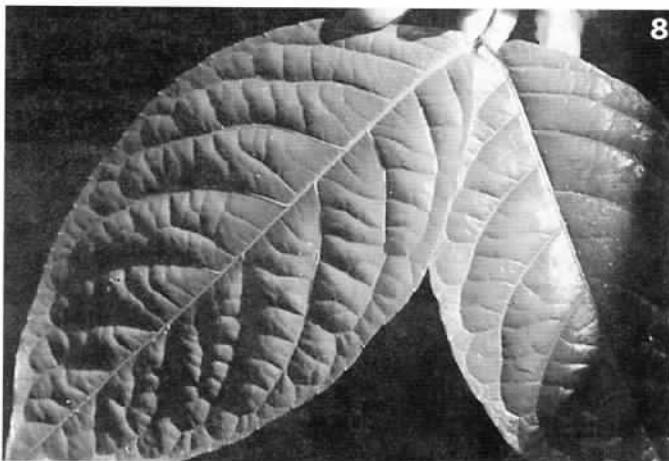
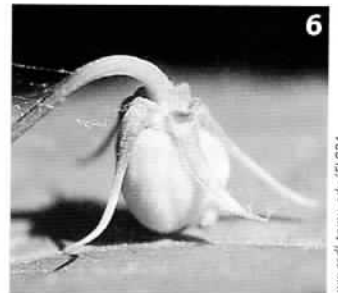
| FAMILIES | COSTA RICA Trees | | KENTUCKY Trees | |
|-------------------------|------------------|-------------|-------------------------|-----------------------------|
| | # genera | (# species) | # genera | (# species) |
| Anacardiaceae | 5 | (8+) | 0 trees | (8 species of shrubs/vines) |
| Annonaceae | 10 | (25+) | 1 | (1) |
| Apocynaceae | 7 | (15+) | 0 trees, | several herbs |
| Araliaceae | 4 | (10) | 0 trees, | 1 shrub |
| Bignoniaceae | 6 | (10) | 1 | (1) |
| Bombacaceae | 7 | (11+) | 0 | |
| Boraginaceae | 4 | (14) | 0 trees, | herbs only in KY |
| Burseraceae | 4 | (14+) | 0 | |
| Caesalpiniaceae | 17 | (25) | 3 | (3) |
| Euphorbiaceae | 21 | (35) | 0 trees, | herbs only in KY |
| Fabaceae | 20 | (40+) | 2 | (2) |
| Fagaceae | 1 | (10) | 3 | (25) |
| Flacourtiaceae | 15 | (20) | 0 | |
| Guttiferae (Clusiaceae) | 12 | (15) | 0 trees, | some shrubs, many herbs |
| Lauraceae | 7 | (9) | 2 small trees or shrubs | |
| Melastomataceae | 7 | (25+) | 0 trees, | a few herbs |
| Meliaceae | 6 | (20+) | 0 | |
| Mimosaceae | 11 | (40+) | 0, 1 introduced species | |
| Moraceae | 15 | (42+) | 1 | (2) |
| Rubiaceae | 30 | (50+) | 0 trees, | 1 shrub, 1 vine, many herbs |
| Rutaceae | 3 | (8) | 2, | small tree and shrub |
| Sapotaceae | 7 | (14) | 1 small tree | |
| Tiliaceae | 5 | (10) | 1 | (1) |
| Verbenaceae | 7 | (14) | 0 trees, | all herbs in KY |

Nectandra: *North American Trees* / N.L. Britton / 1908 | Sassafras: *Trees of Indiana* / C.C. Deam / 1919 | Spicebush: *Shrubs of North-Eastern America* / C.S. Newhall / 1897



1) Pawpaw (*Asimina triloba*), Kentucky's only member of the Annonaceae family, and 2) *Desmopsis microcarpa*, one of the 25+ Annonaceae species found in Costa Rica; 3) *Nectandra coriacea*, one of the many tropical members of the Lauraceae family, and 4) *Sassafras albidum* and 5) Spicebush (*Lindera benzoin*) the only Kentucky representatives of the family;

6, 7) A fruit, flower, and leaf of Canada violet (*Viola canadense*) one of Kentucky's many diminutive, and always herbaceous, species from the Violaceae family, and 8, 9) the gigantic leaves (note finger tips) and thimble-sized fruit of *Rinorea deflexiflora*, one of several Costa Rican trees that are members of the Violet family.



Photos by Hugh Wilson, Texas A&M Vascular Plant Image Gallery, <http://www.csdl.tamu.edu/FLORA>

I also really enjoyed learning all the new ones, as well as learning more about my "old friends" from the temperate zone. I found it extremely helpful to study families that I have known mostly as herbs in the temperate zone, but which appear in a whole new array of forms—vines, shrubs, and even tall trees—in the tropical zone.

My knowledge of plant families has been greatly expanded, and hopefully, I will be able to transmit this new knowledge and new perspective to my students. I am already planning changes in the way I teach my field botany classes, how I teach families, etc., and I know that this experience will affect how I address the whole issue of tropical forest loss and the need to preserve the incredible biodiversity of the region.

Anyone interested in learning more about the Tropical

Dendrology class is welcome to contact me at

ron.jones@eku.edu

or contact Dr. Jimenez at

hjimenez@racsa.co.cr

There is a website set up with photos of our class at

<http://gusalmighty.com/Heidi/costarica>

Upcoming classes will be offered in English from March 11–23, 2002, and June 24–July 6, 2002. A "Tropical Birding" class will be offered in English from July 29–August 10, 2002. Cost of these classes is \$1,800 (not including airfare).

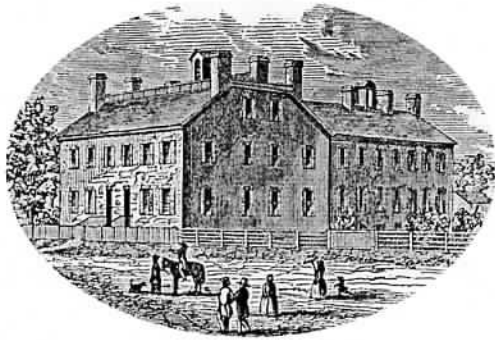


REFERENCE

Janzen, Daniel, et al. 1983. Costa Rica Natural History.

KNPS 2001 CALENDAR of Native Plant-related Service...

Historic Sketches of Kentucky / Lewis Collins / 1847



KNPS FALL MEETING & PROGRAM AT SHAKERTOWN, NOV. 10 – Order Lunch Now!

Join the KNPS fall gathering at Shakertown at Pleasant Hill in Mercer Co., KY, on Nov. 10. Participate in the open Board meeting at the West Lot Family House at 10 am EST, and then Shakertown will provide lunch *for those who have ordered one by Nov. 3*. Lunch choices are—

Shaker Choice: Thinly Sliced Roast Beef and Swiss Cheese on a Hearty Roll

Village Threesome: Oven Roasted Turkey, Smoked Ham & Herb Cheese on a Hearty Roll

Pleasant Hill Salad Plate: Pleasant Hill Chicken Salad & Fruit Gelatin Salad on Garden-fresh Greens, plus crisp veggies & dip

Summer Vegetable Salad: Mixed Greens topped with Garden-fresh Tomatoes, Radishes, Cucumbers, Red onions, Cauliflower & Carrots, Two Cheeses & Bacon Bits with Smoked Ham, Roasted Turkey & Hard Boiled Eggs

All lunches are under \$10.00. *To order, call Mary Carol Cooper at 859-277-0656 by Nov. 3 — otherwise, bring your own!!!* Tom Barnes' presentation on the Ky. River Palisades follows lunch, and then Don Pelly, Shakertown's naturalist, will lead us on a field trip. *See you there!!*

Mary Carol Cooper, KNPS Vice President/Field Trip Coordinator

SEPTEMBER 8, Sat. / KNPS SERVICE TRIP TO COLLECT SEEDS OF EGGERT'S SUNFLOWER, 9 am CST. Mammoth Cave National Park, Barren and Edmonson Counties, KY. Call Charlie Lapham to sign up at 270-646-4060. *See article on page 1 and details of service trip on page 3.*

SEPTEMBER 8, Sat. / Annual Salato Center Fall Native Plant Sale, 9 am–4 pm EST. Salato Wildlife Education Center, Frankfort, KY. The Ky. Dept. of Fish and Wildlife Resources' Native Plant Program will hold its fifth annual fall native plant sale on Sat., Sept. 8, 2001 from 9:00 am–4 pm EST. For more information, call 502-564-7863 or 800-858-1549. The Salato Center is at the KDFWR Game Farm just west of Frankfort (1.7 miles west of US 127 on US 60).

SEPTEMBER 7–8, Fri–Sat. / Mountain Tradition Herb Festival. Wendover, KY (Leslie Co.). Sponsored by the nonprofit Mountain Tradition Educational Project and Kentuckians for the Commonwealth, the festival includes a field trip and workshops in growing and using native medicinal herbs as well as cultivating mushrooms, making baskets and soaps, and other plant-related Appalachian crafts. Registration for all activities, meals, and camping is \$75. Lodging is also available and participation in the Saturday workshops alone is \$10. For complete details check <http://www.geocities.com/beyondyonderrd> or call 606-374-3379 or 672-6444.

SEPTEMBER 15, Sat. / Native Plant Sale at the Louisville Nature Center, 10 am–2 pm EST. Louisville Nature Center, 3745 Illinois Avenue, Louisville, KY. If possible, bring your own empty boxes or flats to carry home native plants for your sunny meadows, shady woodlands, or wetlands.

Don't Forget to Be on the Lookout for False Skullcap, *Mosla dianthera*



International Survey of Herbicide Resistant Weeds, <http://www.weedscience.com>; used by permission.

DAVID TAYLOR FIRST REPORTED on the growing Kentucky distribution of *Mosla dianthera*, an invasive pest plant, in issue no. 15:4 of *The Lady-Slipper* (Early Winter, 2000). Now that it is time for false skullcap to be blooming (August–September, sometimes into October), David has asked KNPS members for help in tracking its spread.

Although it is an annual, *M. dianthera* is identifiable year-round by its odor which is similar to that of beefsteak plant (*Perilla*) which it also resembles physically. It is a member of the mint family with square stems and small, pinkish flowers borne in pairs in the axils of its branches. A complete description, as well as a line drawing, accompanies David's earlier article.

If you notice false skullcap in your vicinity, David would appreciate either information about locations or actual pressed specimens. His address is listed with the KNPS board members information on page 2.



...Projects, Field Trips, and Events

SEPTEMBER 21-22, Fri.-Sat. / Second International Pawpaw Conference. Frankfort, KY. Contact Kirk Pomper, Kentucky State University, 129 Atwood Research Facility, Frankfort, KY 40601; 502-597-5942; fax 502-597-6381; kpomper@gwmail.kysu.edu; or http://www.pawpaw.kysu.edu.

SEPTEMBER 22, Sat. / KSNPC Field Trip to Griffith Woods, 9 am EST. Bourbon Co., KY. A 25th anniversary Ky. State Nature Preserves Commission visit to the best remnant of a Bluegrass savanna. Details: Marc Evans (502-573-2886 or marc.evans@mail.state.ky.us).

OCTOBER 6, Sat. / KSNPC Field Trip to Eastview Barrens, 9 am EST. Hardin Co., KY. A 25th anniversary Ky. State Nature Preserves Commission visit to a tallgrass prairie/oak barrens community. Details: Rick Remington (270-745-7005 or rick.remington@mail.state.ky.us).

OCTOBER 7, Sun. / KNPS SERVICE TRIP AT THE MARY E. WHARTON NATURE SANCTUARY AT FLORA CLIFF, Fayette Co., KY. Come join in the fight against Invasive Exotics!! This will be a bush honeysuckle extravaganza. Bring gloves, loppers, and bow saws to help eradicate this exotic from one of the most unique nature preserves in the state. The service trip will also give you a chance to hike around this beautiful preserve donated by Mary Wharton. Registration required. Call Mary Carol Cooper 859-277-0656.

OCTOBER 6, Sat. / KSNPC Field Trip to Floracliff, 1 pm EST. Fayette Co., KY. A 25th anniversary Ky. State Nature Preserves Commission visit. Details: Joyce Bender (502-573-2886 or joyce.bender@mail.state.ky.us).

OCTOBER 20-21, Sat.-Sun. / KSNPC Pine Mountain Fall Weekend. Celebrate the 25th Anniversary of the Ky. State Nature Preserves Commission with field trips to:
Blanton Forest - Oct. 20, 9 am EST, Harlan Co., KY.
Hi Lewis Pine Barrens - Oct. 20, 2:30 pm EST, Harlan Co.
Bad Branch - Oct. 21, 9 am EST, Letcher Co., KY.
Contact Kyle Napier for any or all of these trips (606-633-0362 or kyle.napier@mail.state.ky.us)

OCTOBER 27, Sat. / KNPS SERVICE TRIP TO RESCUE AND RELOCATE EGGERT'S SUNFLOWER, 9 am CST. Mammoth Cave National Park, Barren and Edmonson Counties, KY. Call Charlie Lapham to sign up at 270-646-4060. *See article on page 1 and details of service trip on page 3.*

NOVEMBER 10, Sat. / KNPS FALL MEETING & PROGRAM AT SHAKERTOWN AT PLEASANT HILL, 10 am-5 pm EST, Mercer County, KY. All KNPS members are encouraged to attend and participate in an open Board meeting (10 am EST) at the West Lot Family House that has been restored as a conference center. At noon or so, a catered lunch from Shakertown will be provided for all those who RSVP (*see details and contact information in box at left*). About 1:30, Dr. Tom Barnes will present his outstanding Flora of the Kentucky River Palisades slide program, and then about 3:00, Don Pelly, Shakertown's naturalist will lead a field trip on one of Pleasant Hill's new trails.

NOVEMBER 17, Sat. / KNPS SERVICE TRIP TO RESTORE SHORT'S GOLDENROD HABITAT, 9:30 am EST. Blue Licks State Park, Robertson Co., KY. Short's goldenrod, a federally endangered species, occurs only in about a two-square-mile area around Blue Licks. Help enlarge and enhance its habitat by carrying out cut branches of encroaching tree saplings. Participants should wear work clothes, sturdy boots, and gloves. Limited to 20. Register: Dave Skinner (502-573-2886 or david.skinner@mail.state.ky.us). 

Kentucky Native Plant Society MEMBERSHIP FORM

Memberships are for the calendar year (January-December).

Name(s) _____

Address _____

City, State, Zip _____

KY County _____

Tel.: (Home) _____ (Work) _____

Add me to the email list for time-critical native plant news.

Email to _____

Membership Categories: Annual - \$7/Individual \$10/Family

Lifetime - \$100/Individual \$140/Family

This is a renewal. This is a new membership.

Membership \$ _____

Gift (optional) \$ _____ Gifts are tax deductible. [IRC 501(c)(3)]

Total \$ _____ (payable to Kentucky Native Plant Society)

Return form & dues to:

KNPS MEMBERSHIP, P.O. Box 1152, Berea, KY 40403

THE KNPS WEBSITE HAS MOVED TO:

<http://www.knps.org>

Check out the new look, the updated info and news, and the new discussion forum!

- Can you distribute KNPS brochures, or watch over the KNPS booth at environmental events in your part of the state, or serve the society in any other special capacity? Please contact any of the officers or board members listed on page 2.
- Would you like to be e-mailed about last-minute native plant rescues or other time-critical native plant-related activities? Send your e-mail address to Michael Thompson at: KNPS_events@hotmail.com

Salato Native Plant Program
**2002 WILDFLOWER OF THE YEAR
NOMINATION FORM**

Wildflower's
Common name _____
Latin name
(if known) _____
Reasons for
nominating _____

Your name _____
Address _____
City, State, Zip _____
Tel.: (Day) _____ E-mail: _____
Date Received (for office use only) _____

See the article below for nomination details.
Nominations must be received by *December 15, 2001*.

Return form to: Salato Native Plant Program, Salato Wildlife
Education Center, #1 Game Farm Rd., Frankfort, KY 40601

Nominations for the 2002 Kentucky "Wildflower of the Year" Due Dec. 15!


by Mary Carol Cooper

Each year the Salato Native Plant Program (Ky. Dept. of Fish and Wildlife Resources) joins the Kentucky Native Plant Society in selecting a native wildflower as Kentucky's official "Wildflower of the Year." The program is designed to increase appreciation for the beauty, horticulture, wildlife, and other values of our native plants; to promote conservation of native species in the wild; and to encourage local nurseries to make these species available to Kentucky gardeners.

The Wildflower of the Year for 1997 was Butterfly Milkweed (*Asclepias tuberosa*), in 1998, Cardinal Flower (*Lobelia cardinalis*), in 1999, Purple Coneflower (*Echinacea purpurea*), for 2000 it was Wild Columbine (*Aquilegia canadensis*), and this year the honor

went to Wild Bergamot (*Monarda fistulosa*). As part of this year's effort to promote the program, the Dept. of Fish and Wildlife Resources distributed 10,000 packets of Wild Bergamot seeds to schools, garden clubs, and conservation groups across Kentucky.

Special attributes of a Wildflower of the Year should include its native origin and common distribution in Kentucky, its easy cultivability in appropriate habitats, a known value to wildlife, and ready availability of plants or seed (at least through mail order sources) for gardeners and landscapers.

If you feel your favorite wildflower qualifies, fill out the Nomination Form above and return it to the address noted. *Nominations must be received by December 15, 2001.* 

(Newsletter return address only.
See p. 2 for contact information.)

Kentucky Native Plant Society
c/o Department of Biological Sciences
Eastern Kentucky University
521 Lancaster Ave.
Richmond, KY 40475-3102

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