

The Kentucky Native Plant Society

NEWSLETTER: Vol. 2, No. 2, May 1987. Editor: Julian Campbell.

JOIN THE SEARCH FOR THE BIG TREES OF KENTUCKY by Ron Jones

The Kentucky Division of Forestry has compiled a list of state champion trees since 1968. The latest list was published in 1985 and includes champions for about 100 species. According to this list, the largest (in circumference) tree in Kentucky is an American Sycamore in Montgomery County. This sycamore measures 35'3.5" in circumference and stands 125' tall. The tallest tree in the state is located in McCreary County; it is a Yellow Poplar standing 174' tall. Of nearly equal size is a Sugar Maple reaching 168' in Letcher County. The list also includes the record specimens for the smaller species, such as Witch-Hazel (1'7" x 43') and Devil's Walking-Stick (1'3" x 17'). Several of our state champions are also national champions or co-champions. These include an Ohio Buckeye at 12'2" x 144' in Casey County, a Sassafras at 21'1" x 76' in Daviess County, a Kentucky Coffee tree at 17'17.5" x 78' in Morgan County, a Sweet Birch at 8'6" x 117' in Floyd County, a Bur Oak at 26'7" x 95' in Bourbon County, a Big-tooth Aspen at 11'8" x 102' in Estill County, and a Striped Maple at 4'6" x 65' in Harlan County.

A pamphlet listing Kentucky's Big Trees is available free of charge from the following address: Big Trees, Kentucky Division of Forestry, 627 Comanche Trail, Frankfort, KY 40601. The pamphlet includes directions on how to measure a tree and nomination forms for potential records. The basic measurements needed are the circumference in feet and inches at 4.5 feet above the ground, the vertical height (determined with a hypsometer) to the nearest foot, and the crown spread to the nearest foot. Anyone can nominate a tree, and the search for big trees is an exciting hobby for many tree enthusiasts. Many of the nominations come from foresters, but anyone with a sharp eye for big trees might discover an unnoticed champion while they are hiking or traveling around the state. No doubt, there are some undiscovered national champions in our state, and Kentuckians should be on the lookout for them. There is also a need to help complete the listing of our state champions, for not all species have been nominated, or else the champions have died. In the latest state listing, there are no Swamp White Oak (Quercus bicolor), Red Elm (Ulmus rubra), Winged Elm (Ulmus alata), Rock Elm (Ulmus thomasi), September Elm (Ulmus serotina), White Basswood (Tilia heterophylla), and Yellow Buckeye (Aesculus octandra). A National Register of Big Trees is published every four years by the American Forestry Association. The latest edition appeared in the journal, American Forests, volume 92, April and July issues, of 1986. The National Register lists the record specimens for about 700 species of native and naturalized trees in the US. A copy can be obtained for \$3.50 by writing: National Register of Big Trees, American Forestry Association, PO Box 2000, Department OG, Washington, DC 20013.

The goal of national and state big tree programs is to encourage the appreciation of our native trees, one of our greatest national resources. Through recognition of our champion specimens, an interest is stimulated in learning more about trees and their importance in our lives. There is also a need to protect these specimens of record size, and a program has been started to protect trees at least 200 years old by the National Arborist Association, 174 Route 101, Bedford, NH 03102. Many champions currently have no legal protection, and some have already succumbed to urbanization or the lumber yard. These big trees are ancient living things, they are a reminder of our past, and they deserve our admiration and our protection.

FINAL DUES REMINDER

For those who have not yet renewed their membership, this is your last chance to renew for this year (1987). Send two dollars to Ron Jones at ECU (see return address on this newsletter). Even if you have not yet participated in KNPS, please don't give up yet. We are continuing to organize activities that will involve more members. In a year or so, we will probably start life memberships for those who don't want to bother with annual mailings.

A "PLANT-WATCH" NETWORK OF KNPS MEMBERS?

One idea for involving KNPS more directly in the study and protection of rare native plant species, would be for a member in each county to be made responsible for checking on sites in the county with rare species. The entrusted member could keep the Society, the Nature Preserves Commission and The Nature Conservancy informed of potential threats to sites, changes of ownership, and newly discovered sites. Special field trips could be organized for such "Plant Watch" activities. Seed collection could also be a useful activity, and we hope that a center for cultivation of rare species will eventually be set up in the state (see Pat Haragan's article below). Even if you are just a budding amateur botanist, some of the few professionals in the state would be happy to show you how to identify rare species in your county: Such work could be linked with a general County Flora project, which could be supported through an institute of higher learning in the state (see Ron Jones' article two issues ago). Let us know if you would be seriously interested in such work. Write to Ron Jones at the return address on this newsletter. (Ed.)

RARE PLANT POACHER, DIG YOUR HEART OUT!

Someone seems to have dug about three snow trilliums from Jessamine Gorge this year, with no permission from the landowners or The Nature Conservancy. This is inexcusable, and we hope no-one from the society was involved. Please help spread the word that some species need a "hands off" policy if their survival in the state is to be secured. Similar incidents have come to our attention over the years, especially involving rare orchids. Anyone wishing to cultivate rare plants should first check with the Nature Preserves Commission in Frankfort. Responsible collection of a few plants or seeds is reasonable in some cases, but this should be done with the knowledge and agreement of the botanical community, not just the landowner. The primary reason should be to help save the species from extinction, and some cultivated plants should be put back into the wild from where they have been taken.

ERRATA

In the last issue, I (the Editor) made more errors than usual, and I apologize to all concerned. The worst of these errors were as follows.

- (1) The Erhlichs were misspelt (page 1).
- (2) Meet at Hardees's Restaurant not Harold's on May 9th (page 3).
- (3) Willdenow has two l's (page 9-10).
- (4) Near the end of John Thieret's article (page 10), it should read:-

And thus, eventually, our plant came to be known as "false mermaid", a name based on an error. Even though false mermaid is inconspicuous and ephemeral—to say nothing of being a mermaid by mistake—it is well worth knowing.

FIELD TRIP SCHEDULE by Mark Evans

The first two of these trips were detailed in the previous issue, but please note the corrected place to meet on 9th May.

9th May (Saturday), BIG BLACK MOUNTAIN (Harlan County). Meet at 11.00 a.m. by Hardee's Restaurant in the town of Cumberland. Leader: Richard Cassell (502-458-4044).

16th May (Saturday), LILLEY CORNETT WOODS (Letcher County). Meet at 10.30 a.m. at the Visitor Center by the woods (on Rt. 1103, 7 miles SE of Rt. 7 in W. Letcher County). Leader: Dr. William Martin (606-622-1476).

23rd May (Saturday), BOONE COUNTY CLIFFS. This preserve, owned and managed by the Kentucky chapter of The Nature Conservancy, is known for its glacial outwash cliffs, old growth forest community, abundant spring wildflowers and the uncommon red-backed salamander. The trail is less than 1 mile and fairly easy except for a few steep places. Meet at 9:30 a.m. in the preserve parking lot. From Lexington take I-75 north to Highway 18, go west through Burlington, continue for several miles until road goes down a large, steep hill. At the bottom of the hill turn left on Middle Creek Road. Preserve is on the left about one mile down the road. Leader: Dr. William Bryant (606-344-3370).

6th June (Saturday), REELFOOT LAKE (Fulton County). Meet at McDonald's Restaurant in Fulton, KY at 8 a.m. (CDT) for breakfast, or meet at Headquarters of Reelfoot National Wildlife Refuge at 9 a.m. (CDT). This trip will involve moderate hiking around the swamplands to observe the plants and animals of these habitats. The area visited will be the Walnut Log Area. Overnight lodging can be obtained in Fulton or at the Reelfoot Lake Airpark Lodge (901-253-7756). Leaders: Dr. Harold Eversmeyer (502-753-6505), Dr. Charles Smith (502-753-9385).

11th July (Saturday), PANTHER GLADE NATURAL AREA (Hardin County). This natural area, soon to become a protected nature preserve, is one of the outstanding limestone glade communities in Kentucky. On a short easy walk, we will see many native prairie wildflowers and grasses including some endangered or unusual species, at least in the vegetative state, including the White Lady's Slipper, Silky aster, Great Plains Ladies' Tresses, Glade skullcap, Crested Coral Root orchid, Rattlesnake Master and many others. Also, after lunch, we will visit a nearby site for the rare wild pink, Silene regia. Meet at 9:30 a.m. (EDT) at the rear of the McDonald's parking lot on Highway 62 in Elizabethtown. From I-65 take the Highway 62 Elizabethtown exit. Head west into town. McDonald's is on the right about two miles from the interstate. Leader: Marc Evans (502-564-2886).

22nd August (Saturday) CARTER CAVES STATE PARK (Carter County). Carter Caves State Park contains many unique geologic and natural features as well as a variety of endangered and rare plants and animals. The park is best known for its several caves and beautiful scenery of Tygarts Creek gorge. Meet at 10 a.m. at the Nature Center next to Cascade Cave. We will have moderately easy walks, before and after lunch. Leader: John Tierney, Park Naturalist (606-286-4411).

12th September (Saturday) MANTLE ROCK NATURAL AREA (Livingston County). Mantle Rock Natural Area contains a unique sandstone glade natural community with many unusual plants. The site also has a large natural arch and a mesic gorge surrounded by cliffs, and it is of historic interest since it is where the Cherokee Indians camped on their forced march on the "Trail of Tears." Meet at 10 a.m. (CDT) in the parking lot of the Joy General Store at the intersection of KY 135 and 133 in Joy, KY, Highway 135. Take 135 north to Joy. The hike is moderately easy. Leader: Marc Evans (502-564-2886).

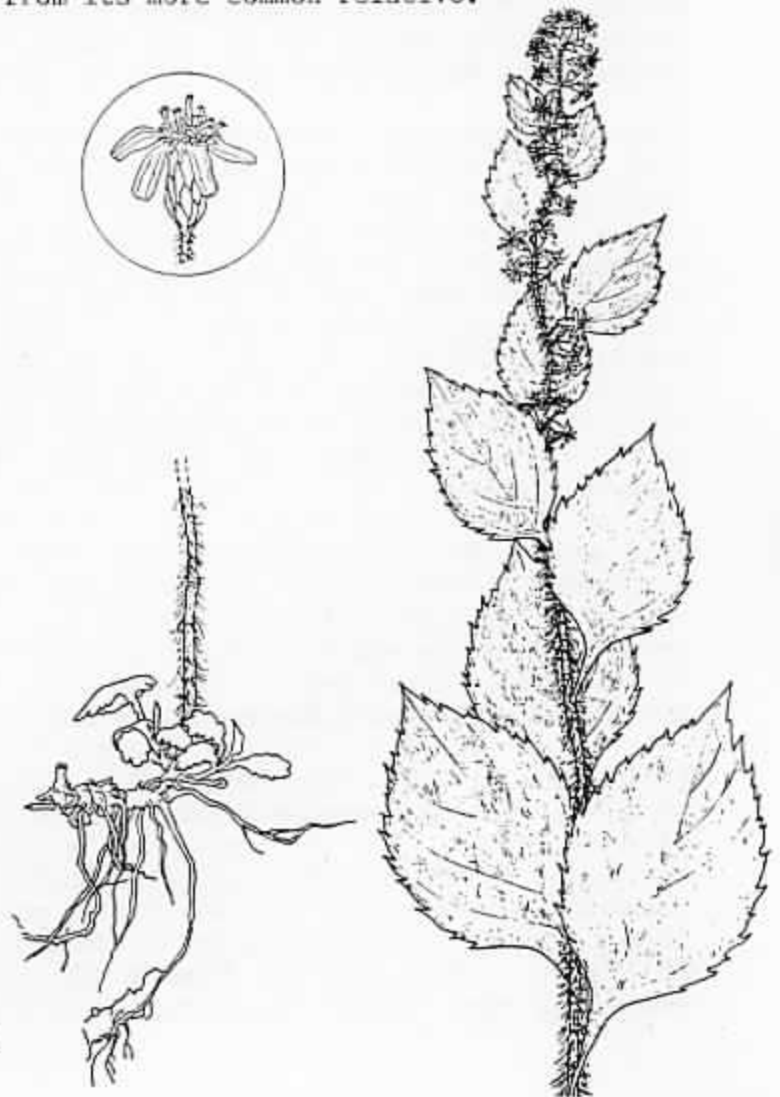
WHITE-HAIRED GOLDENROD (*Solidago albopilosa*), KENTUCKY'S NEXT ENDANGERED PLANT
by Hal Bryan, Bald Knob, Kentucky

When most Kentuckians think of goldenrod, the "state flower," fields of tall, yellow weeds sprout in their minds. Few people realize that goldenrod means not only old-field goldenrod, *Solidago canadensis*, but thirty additional species in the fall-flowering genus, *Solidago*. Some of these are specialized plants that persist in restricted habitats.

White-haired goldenrod, *Solidago albopilosa*, is a rare resident of sandstone rockhouses that grows only in a small area in Kentucky's Red River Gorge in Wolfe, Menifee and Powell counties. E. Lucy Braun published her discovery of the plant in 1942. There was disagreement, however, on her determination of it as a separate species, and Fernald wrote in Gray's Manual (1950), that "it seems like an ecological development of No. 3 (broad-leaved goldenrod, *Solidago flexicaulis*) into which it passes or with which it hybridizes." Fernald was partially correct. It does appear to have developed in its unique habitat from broad-leaved goldenrod, and a few hybrids appear where the two species converge. But broad-leaved goldenrod flourishes in the rich loam of sunlit forest floors, while white-haired goldenrod grows in the sandy soil behind the dripline of rockhouses, where rain rarely reaches and the sunshine is second-hand.

Perhaps the long, white hairs on *S. albopilosa* decrease water loss from the leaves, and its straggly, often reclining, posture was originally a response to low light levels. But these characteristics remain in greenhouse grown plants and distinguish white-haired goldenrod from its more common relative.

White-haired goldenrod is currently under status review for listing as a federally endangered plant by the US Fish and Wildlife Service. Its seemingly sheltered sites are constantly being tampled by visitors eager for the wilderness experience that the Red River Gorge provides. Approximately half of its once-known locations have been eliminated by human disturbance. The proposal to officially list white-haired goldenrod is expected to be published in the Federal Register in the next few months. This rare endemic will become Kentucky's third federally protected plant species following Short's goldenrod, *Solidago shortii*, and running buffalo clover, *Trifolium stoloniferum* (which appears to be extinct in Kentucky).



Drawing by Cathy Justis

START OF THE KNPS WILDFLOWER SEED BANK by P. D. Haragan

Growing wildflowers from seed in your garden can be an educational and rewarding experience. It is an excellent way to learn how to recognize, conserve, cultivate, and propagate the native plants of Kentucky. Successful cultivation in a small wooded plot, or open, sunny area can yield great pleasure and knowledge both botanically and horticulturally. It can preserve or even increase the supply of some plants, since many wildflowers multiply rapidly under cultivation producing a surplus of seeds. These seeds, if stored in a seed bank, can be sown in other non-garden areas or swapped with other gardeners. Proper wildflower gardening can aid conservation by preserving genetic diversity in a small but significant way.

The KNPS is starting a seed bank which will promote selecting, saving, and exchanging Kentucky's native plants. The bank will supply interested members with the seeds of various species for the purpose of starting a wildflower garden or for other conservation purposes. The seeds will be available from one central location where members are encouraged to deposit their surplus seeds for exchange. If the bank does not have a certain species you want, then try contacting seed companies that specialize in wildflowers, or collect seeds from plants in the wild yourself. When collecting in the wild, be sure that you are familiar with the laws prohibiting the removal of seeds from rare plants.

Collect seeds from common species that are abundant in a given locality and gather a few seeds from as many different plants of the same species as possible. Make sure that you do not harm the plant and that there are plenty of seeds left for the plant to reproduce again. Prematurely harvested seeds, or green seeds, are usually poor germinators, so look for dark-colored seeds that are easily dislodged from the plant. Another way to collect seeds is to tie a muslin bag over the flower head just before the seeds start to ripen. You may need to check on a species for several days, or weeks, to make sure that you harvest the seeds when they are freshly matured, but before they have all been dispersed.

Once the seeds are collected, they should be dried to prevent molding. Seeds contain 20 to 40% water, and it is important to reduce the moisture content to 6 to 8%. Spread the seeds out on an absorbent material such as newspaper or paper towels for a week and make sure they have good circulation of air. The seeds will need to be cleaned before storage. Using your fingers, remove as much of the debris as possible before putting the seeds through a wire screen for final cleaning. The screen mesh should be slightly larger than the seeds. Fleshy fruits may be soaked before the seeds are separated.

Once the seeds are dry, they can be kept in a cool, dry place such as a refrigerator. The ideal temperature is 40 degrees Fahrenheit. The use of plastic bags, airtight containers, or metal cans may cause molding and is not recommended. The clean seeds should be put in paper packets that are marked with the name of the plant, location, and date of harvest. This allows the gardener to tell how long they may be stored, if he does not plan to sow them in the near future.

Extra seeds that have been cleaned and stored in packets should be sent to the KNPS seed bank. The address is: Patricia Dalton Haragan, Department of Agronomy, Herbarium Room A-4, Agricultural Science Building North, University of Kentucky, Lexington, KY 40546-0091. This will allow other gardeners to swap seeds and increase their stock of plants. Since some species thrive better in certain areas of the state than in others, a variety of seeds can be exchanged with mutual benefits.

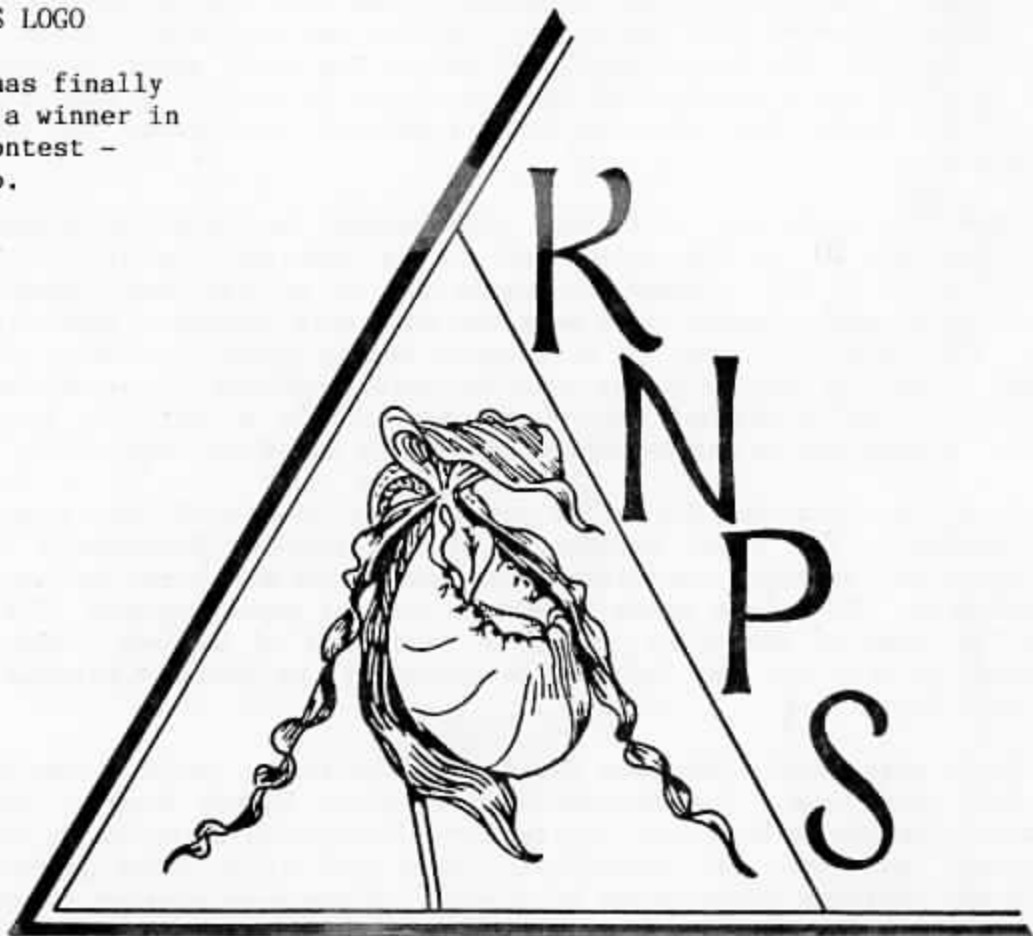
NATIVE PLANTS OF VALUE TO WILDLIFE IN SPRING by Charles Elliott

The sight of Canada geese passing over my head a few weeks ago reminded me of how critical spring plants are to wildlife, especially birds. At this time of the year birds that migrated south for the winter are returning, and along with resident species, they are turning their attention to nest building. The availability of quality food during nest building has a major effect on the condition of the female bird as she enters the egg-laying season. The bulk of food items consumed by birds during spring are insects, but 5 to 10% of many species diet comes from native plants. Eastern meadowlarks consume bristlegrass (Setaria spp.), while chipping sparrows, white-throated sparrows, tree sparrows and vesper sparrows favor bristlegrass, panicgrass (Panicum), smartweed (Polygonum), pigweed (Amaranthus) and lamb's quarters (Chenopodium). Blueberry, blackberry, Paspalum grass and smartweed are valuable spring foods for eastern towhees and red-wing blackbirds. Even the "weeds" crabgrass (Digitaria) and ragweed (Ambrosia) are important spring foods for English sparrows and goldfinches. Many of the plants of value to birds as spring food fall into the "weed" category. Because of the low value most people place on weeds, they are often eliminated from around our homes. Weedy areas such as fencerows, ditches, and around outbuildings such as garages, are frequently burned or cut to "get rid of the weeds" and make the place "look better." In the process of trying to improve on nature, we may be removing a very valuable part of the spring habitat of many of our local birds. So next time you're out to do some lawn or garden work, stop before you destroy those weeds and ask yourself if it would really detract from the beauty of your property if you left a little spot for wildlife. If you leave some weeds, it's very likely you'll be rewarded by seeing many different types of birds visiting your "wildlife garden."

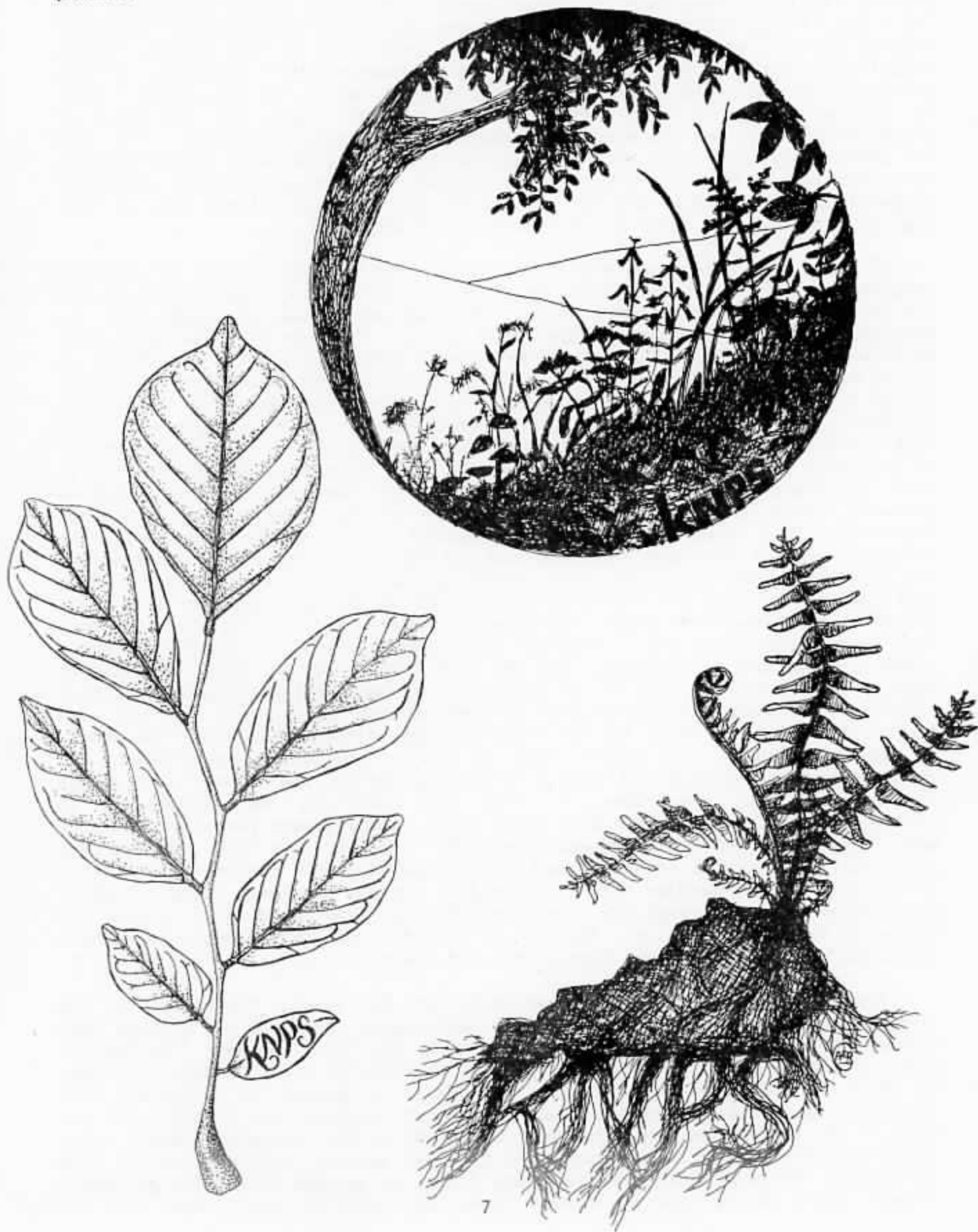
KNPS LOGO

The board has finally
decided on a winner in
the logo contest -
Ann DiSalvo.

Here it is.



Here are some other entries, by Ann Rechin. We will continue to include others, and any other good artwork that members send in, depicting our native plants.



Land use, like the rest of life, has economic, aesthetic and spiritual aspects. Economic uses have dominated central Kentucky since settlement 200 years ago, though farmland has developed some aesthetic associations. Spiritual aspects are not obvious to us, as they may have been to the earlier Indian inhabitants, but they may still be involved in some peoples' attitudes, in both protectionist and exploitationist views (like James Watt). In this essay, I want to outline the potential diversification of economic uses, the evolution of aesthetic aspects, and the need for a responsible conservation ethic. The need for research remains great, and propagation techniques for many native species have received little attention. Thus, instead of offering detailed practical suggestions, I will just mention historical and potential future uses of most general interest, and which deserve further investigation.

An early aesthetic example was the change from primeval forest to woodland pasture. Several early accounts speak of the attractive landscape developed around Lexington in the early 1800s. The Ashland estate of Henry Clay was frequently mentioned. Thomas Hulme (1819 in R.G. Thwaites 1905 "Early Western Travels 10:65) stated: "I approve of Mr. Clay's method very much, especially in laying down pasture. He clears away all the brush or underwood, leaving timber enough to afford a sufficiency of shade to the grass, which does not thrive here exposed to the sun as in England and other climates. By this means he has as fine grass and clover as can possible grow." This practice became widespread. An anonymous traveller (1834 in F.L. Schwaab 1973 "Travels in the Old South", p. 266) described the land between Lexington and Georgetown: "The woodland pastures, which are peculiar to this section of the country, are remarkable beautiful...This pleasing effect is produced by a simple procedure. The woodlands are all inclosed; the underwood and the useless trees are removed, and the valuable timber trees are left, standing sufficiently wide apart to admit the rays of the sun and the free circulation of the air between them. The ground is then sown with grass, and extensive tracts, which would otherwise have been mere forest, are thus converted into spacious lawns, studded with noble trees. These are so numerous, and of such extent, as to form a prominent feature in the scenery, and it is impossible to imagine any thing of this kind more beautiful than the alternations of woodland and meadow, with hemp and corn fields, and orchards, which the eye meets in every direction...Within the memory of living witnesses, the region which is now so splendidly embellished, and which supports a numerous and highly refined population, was covered with savage forests and vast cane-brakes..." From that time on, the resemblance to traditional English parks has been often noted, though, more recently, remnants have been described as "savannah-woodland". "Beauty" to the settlers was inevitably linked with economic uses most compatible with English agriculture. If the Japanese had settled this land instead, perhaps the cane, being a bamboo, would have been preserved for their traditional uses rather than grazed and plowed to virtual extinction. Now, can we persuade the Toyota people to plant a canebreak between their Scott County site and Interstate-75?

Aesthetic aspects may be quite different for people interested in the diversity of nature. The botanist C.S. Rafinesque struggled to develop such aesthetics at Transylvania College, beginning his first lecture "On Botany" (1820 reprinted 1983 by Whipporwill Press of Frankfort) with "I shall undertake to speak of blossoms and flowers...to excite a desire of bestowing some attention upon these beautiful ornaments of our gardens, our fields, and our woods." He also urged economic uses neglected in the Bluegrass farms, e.g., forage use of cane and sugar production from the maples, both cleared out from the forest: "We ought not to be blind any longer to our own interests; we should respect every maple tree as a holy tree, we ought to enact laws for its

preservation, we ought to plant it in our woods and fields instead of the Lombardy poplar, the useless sycamore, and even the less valuable oaks and hickories." In 1824-25, he tried to form a botanical garden in Lexington (on 10 acres just north of Main Street at Rose Street), with a company of many subscribers. The garden was to emphasize economic native plants, including medicinal and ornamental. But, in his own words (1836 "Life of Travels"), "I soon became aware of a secret hostility to my undertaking, and several subscribers did not pay their dues". He had to abandon it after only a few months of planting. While one might suspect that his eccentric personality alienated people, this failure might also be viewed as a sad early chapter in the long history of botanical neglect in Kentucky. This state has remained without such a garden until today. Current plans for a botanical garden in Louisville and an arboretum in Lexington may mark a turning point.

Today, special interest in native plants for landscapes must be based on some conservation ethic, attempting to preserve as much as possible of our local natural heritage. To some extent, this has practical aspects, since many native species are clearly well-suited for growth and economic production in this area. However, many other native species have little or no economic value. To a greater extent, such conservation has aesthetic aspects, at least to those with a sense of natural history, since any native plant community is a never ending source of interest, beauty and amazement, with hundreds of species having sorted themselves out into little niches over millions of years. In my view, the restoration of natural vegetation remnants in this area, for continued reverence, deserves at least as much attention as the restoration of old historical houses, like the "State Shrine" at Waveland. But society, in general, likes to be reminded of how much it has constructed out of the wilderness, rather than what little remains of that wilderness.

Several native species deserve much more attention for practical uses in the Bluegrass Region. "This portion of Kentucky was once the paradise of pawpaws, where immense orchards of large trees were everywhere met with" (C.W. Short's 1828 Florula Lexingtoniensis), but these have now been devastated by agriculture. The pawpaw is a delicious fruit, related to tropical 'custard apples', and it has exotic-looking deep red flowers. It has not been developed economically because the plant prefers partial shade on rich moist soil, fruit production is not high, and the fruit does not store well. But there is much scope for reintroduction to back-yards, fencerows, streamsides and ditches. It spreads from root suckers, providing a quick shrubby fill to woodland edges. The native "red" mulberry has also declined much since settlement. This has tastier fruit than the Eurasian "white" (or pink-purple) mulberry, but production is probably lower. Persimmons are more tolerant of poorer soils and exposed sites, and fruit production is generally high. Moreover, they can be preserved well by freezing as whole fruit or de-seeded pulp, which is very good without added sugar in pies, cakes, etc. Some of our native nuts are also quite useful: black walnuts, white walnuts (or butternuts), shellbark and shagbark hickories. However, selection of thinner shelled varieties is important for commercial use. Anyone seriously interested in producing these native nuts and fruits in Kentucky should contact John and Lisa Brittain, Nolin River Nut Tree Nursery, 797 Port Wooden Road, Upton, KY 42784 (tel:502-369-8551).

For shade trees in the Bluegrass region, the following species should be considered much more often: linden (basswood), Shumard oak, yellow (chinquapin) oak, burr oak, red (slippery) elm, white ash, yellow (tulip) poplar and black maple (a subspecies of sugar maple). For example, pin oak has been planted extensively in the Lexington area, but it is not native here. Its native cousin, Shumard oak, grows about as fast, lacks the lime-chlorosis (yellowing) often seen in pin oak, has leaves that decay faster, is more drought tolerant, makes a

more stately tree (without straggly descending lower branches) and lives longer (to 400 years or more). But pin oak is much more widely available in the nursery trade, and there has been virtually no interest in Shumard oak as a potential local replacement. Other native trees may be problematic close to buildings, due to unkempt form (e.g., blue ash), large fruit or seed productions (e.g., black cherry, buckeye, coffee tree) or thorns (locusts), but these species can still break the monotony of more commonly used species, and provide natural interest. Cherry, buckeye and black locust do have attractive showy flowers. Wood production is of course a low priority in the Bluegrass Region, but the potential has not been adequately quantified. On the best lands, black locust, cherry, walnut, etc., can grow surprisingly fast for long periods.

Small native flowering trees and shrubs deserving more propagation include yellowwood, hawthorns, plums, crab apples, dogwoods, viburnums, shrubby St. John's worts, roses, etc. The 20-30 species of hawthorn native in Kentucky are mostly infrequent or rare, and these have been little studied. An interesting problem with native trees and shrubs in central Kentucky is the virtual lack of evergreens, except for red cedar. That species is often despised for its weedy invasion of rough farmland but it is really quite an attractive tree, with much variety in form to choose from. The only other true evergreen native to the region, apart from some semi-evergreens like strawberry bush (Euonymus americanus), is the diminutive and exceedingly rare mountain lover (Pachystima canbyi). This species is distributed by some nurseries for a special ground cover, but the source of their stock is probably the Appalachian mountains. A disjunct population discovered just last year in Jessamine County will be propagated at the University of Kentucky for comparison with Appalachian stock.

The most challenging work with native plants is to try and make disturbed forest remnants more like their primeval state, for the sole sake of nature conservation and interest in natural history. With no obvious economic benefits, such restoration runs counter to the traditional woodland pasture management, and phytophobic people, afraid of so-called weeds, bugs and snakes, object "aesthetically" to a woodland that is not "cleaned out" thoroughly. However, "cleaning out" the understory prevents natural regeneration, and, together with logging or natural mortality of trees, this has ensured the gradual decline of woodland pasture. Restoration research is a new science, and pioneering work has been done in the mid-west, especially at the University of Wisconsin Arboretum in Madison. In Kentucky, the need for such work is particularly great in the largely deforested Bluegrass Region, where historical records and old land surveys must be used to indicate the original condition.

To illustrate these problems, I will briefly describe the Shady Lane Walnut Grove, a typical Bluegrass woodlot preserved on the University of Kentucky campus, and I will suggest how one might proceed. The canopy includes a few 200-350 year old trees of blue ash, yellow oak and burr oak, but it is mostly black walnut, coffee tree and white ash, with an understory dominated by hackberry in the least disturbed area. The list of tree species is virtually identical to that existing around Lexington 200 years ago, though Ohio buckeye, bitternut hickory and sugar maple are under-represented in these modern woods. The most striking difference from the primeval state is the highly disturbed understory and ground vegetation, caused by former grazing and mowing. The exotic bush honeysuckle (Lonicera maackii) and the creeping Euonymus fortunei, both from northeast Asia and much cultivated here, have spread into much of the shrub and ground layers, respectively. Proper restoration will have to involve cutting and poisoning the bush honeysuckle. Small trees and shrubs that were widespread before settlement in the area are pawpaw, spicebush, plum, hornbeam (Carpinus), hawthorns (C. mollis and C. crus-galli), ironwood (Ostrya) and redbud. Cane (the bamboo, Arundinaria gigantea) was abundant in open woods and

edges. (The common shrub on poorer Bluegrass soils, in oak-hickory forest, etc., was flowering dogwood.) These species could all be planted throughout the woods at low density to begin with, then relationships of their growth to local site conditions within the woods studied over a few years. The resulting indications of site preferences could be used to guide further plantings, and would be of great scientific interest.

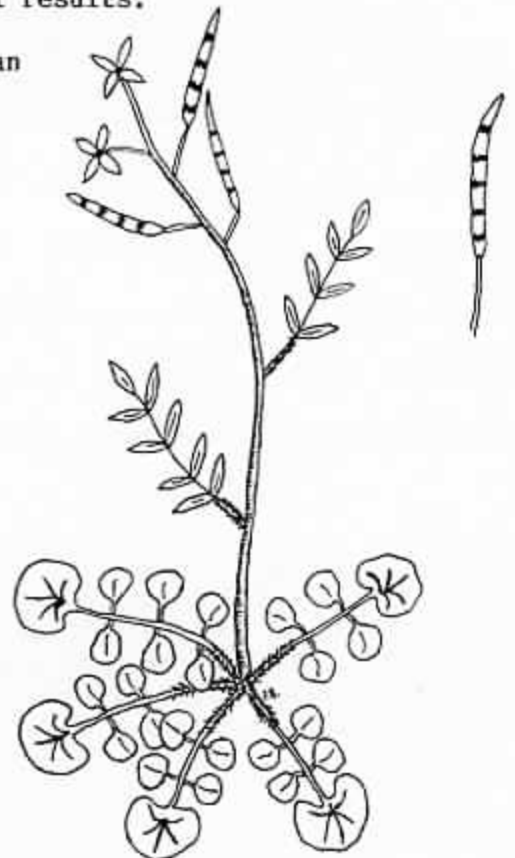
Restoration of the ground vegetation would take much more effort. There may no way to remove the Euonymus except by ridiculously intensive hand weeding and digging. Also, one of the commonest herbaceous species in this region before settlement was the running buffalo clover (Trifolium stoloniferum), probably growing along animal trails through the woods. However, this species appears to have become extinct in Kentucky, and it is known to survive wild only in West Virginia, though now cultivated at the University of Kentucky.

In addition to the two exotic species just noted, some others have become widespread in central Kentucky: white mulberry (Morus alba), "Tree of Heaven" (a sacriligious misnomer for the stinking Ailanthus altissima), Osage-orange (Maclura pomifera - though native to the Ozark Region), privets (Ligustrum spp.), a cherry Prunus mahaleb (on rocky slopes), Rosa multiflora, etc. Some of these have become problematic weeds, and few have current practical uses in the naturalized state (except Maclura for wood). Although it will be impossible to remove these from large landscapes, every effort should be made to remove them from nature reserves and restored areas.

The use of native plants for landscaping, whether just selecting economically useful species, or trying whole forest restoration, can be greatly helped by preserving a range of native plant communities in the area as a source of material and ideas, and by establishing an arboretum for research and education. Preservation in central Kentucky is poor, though the Nature Conservancy is doing useful work along the Kentucky River. Much more attention from local government and land owners is needed. The recent planning for an arboretum on campus, next to the Shady Lane Walnut Grove, may offer some hope for increased research, education, funding and practical results.

PAT'S WEED PATCH by Patricia Dalton Haragan

Hairy bittercress (Cardamine hirsuta L.) is a member of the mustard family or Brassicaceae. This delicate winter annual reproduces by seeds and grows to 40 cm tall. Several stems arise from a basal rosette of leaves that have one to three pairs of rounded, lobed leaflets with the terminal lobe the largest. The few stem leaves are smaller with narrow segments. The leaf stalks and the upper surface of the blades are hairy. Produced in racemes are the small, white flowers composed of four sepals and four petals. The conspicuous fruit is erect, slender, and up to 22 mm long. Native to Europe, it is found throughout the state growing along roadsides and in turf, gardens, disturbed sites and fallow and cultivated fields. It generally blooms in March through April. (But it started in late February this year, and seems to be especially vigorous with larger average size than usual. - Ed.)



KENTUCKY NATIVE PLANT SOCIETY
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The Kentucky Native Plant Society was founded in 1986 as a botanical organization for all persons interested in the native flora and vegetation of the state. The goals of KNPS are to serve as a medium of information exchange, to promote conservation and education concerning native plants and plant communities, and to encourage botanical research in Kentucky. Membership dues are \$2.00 per year. The KNPS Newsletter is published quarterly (Feb., May, Aug., Nov.). Back issues are available at \$.50 each.