Kentucky Native Plant Society *NEWSLETTER*

Vol. 8, No.1. February, 1993

Message From The President

by Landon McKinney

I sincerely hope each of you will enjoy this, our first newsletter for 1993. Doug Reynolds, our Editor, has been flooded with excellent articles from a number of people. In fact, more articles were received than could possibly fit into one newsletter. This will necessitate putting several off for future issues. However, since there have been times in the past when our editor scrambled until the last minute to accumulate enough articles to fill the newsletter, this is, of course, a much-welcomed change. Needless to say, much effort goes in to producing what I think is one of the best Native Plant Society newsletters in the country. Many thanks to Doug for this effort.

Within this issue, you will find a copy of the Executive Board's proposal for a new set of bylaws. Changes were required because of our incorporation. Article III is new and Article V has been updated to reflect the specific duties of each officer. Otherwise, the revised bylaws are very similar to our original bylaws. Please take some time to look over these bylaws and address any comments to me at your earliest convenience. The acceptance of these proposed revisions will be voted on during our spring business meeting at the "Wildflower Weekend" at Natural Bridge State Park.

As tax season rolls around, I would like to ask each of you to consider donating to the Nongame Wildlife/Natural Area checkoff fund on your Kentucky tax form. This fund helps both the Kentucky State Nature Preserves Commission and the nongame program of the Kentucky Department of Fish and Wildlife Resources monitor and protect the many rare plants and animals in Kentucky. It also helps fund the acquisition of unique natural areas such as old growth forests, pristine wetlands, and prairie remnants. As members of a native plant society, all of you are aware of the importance of protecting Kentucky's natural heritage. Your contribution will certainly help our continuing efforts to do just that.

Spring Events and Field Trips

March 27, April 3, 11, 17 - KNPS Certification Course - Plant Communities of Kentucky
Instructor Landon McKinney, Botanist with KY State Nature Preserves Commission. Details in Nov. 1992 KNPS newsletter or phone (606) 622-1228.

Sunday, March 28 - A First Look at Floracliff (Fayette County) - 1:00 P.M. (E.T.)
Leader, Clara Estel Wieland, Wildflower enthusiast Ph. 606-266-5548. Come and enjoy the first search for wildflowers at the Mary E. Wharton Nature Sanctuary. Due to the sensitivity of the site and guidelines, this trip will be limited to 15 people, and visitors must sign a waiver of responsibility. Be prepared for steep hills and "faint" trails. Call Clara to register for the trip and for weather questions. Meet at 1:00 P.M. at Jerry's at I-75 and Athens-Boonesboro Road in southeastern Lexington. From the north, take I-75 south to exit 104, Route 418, Athens-Boonesboro Rd. Turn right at the end of the

ramp and Jerry's is directly on your right. From the south, take I-75 north to exit 104, Rt 418 Athens-Boonesboro Road. Turn left at the top of the ramp. Jerry's is on your right after you pass over the interstate.

Sunday, April 18, 1993 - Explore Vernon Douglass Woods (Hardin County) in the Spring 1:00 P.M. (E.T.)

Leader: Tom Bloom, KY State Nature Preserves Commission.

Tom will show us the changes in the woods and the spring array of wildflowers since he last led us through this area in January. If you missed that trip, don't miss this one. Meet in Elizabethtown, KY at 1:00 P.M. at Shoney's on US 62. From the east, take the Bluegrass Parkway to Elizabethtown, go on I-65 North to the first exit (US 62), take a left at the light, and Shoney's will be on the left. From Louisville, take I-65 south, exit at Elizabethtown at the US 62 exit, take a right at the bottom of the ramp and Shoney's will be on your left. Call Tom to register at (502)-564-2886 during the day. Call him at home (606) 734-5509 on the day of the trip about questionable weather conditions. Please only use the home number on the day of the trip. There are sleeping children.

Sunday, April 18 - Oil Well Rd.(Barren Co.) 10:00 A.M. (C.T.)

Leaders: Charlie and Arlene Lapham, KNPS members.

Barren Co. is in southcentral KY, an area where KNPS has not had a lot of field trips recently. Over 20 years ago a flood took out the bridge over Skaggs Creek which was never replaced. The subsequent neglect of Oil Well Rd. south of Skaggs Cr. allowed substantial recovery of native species. Trilliums, saxifrages, and many other spring wildflowers are known to exist in the area. Call Charlie or Arlene at (502) 651-6114 for reservations and directions. We will meet at:
Modern Flower Shop, 614 Columbia Ave. Glasgow, KY.

April 23, 24, 25 - Smokies Wildflower Pilgrimage.

43rd Annual Wildflower Pilgrimage featuring many fieldtrips and presentations. Call the Botany Department at the University of Tennessee at (615) 974-2256 for a brochure or more information.

April 30, May 1, 2 - Wildflower Weekend at Natural Bridge and Annual Spring Meeting of KNPS.

See pg. 11 for details and schedule.

Saturday, May 15 - Glades in Springtime: Bowling Green area. 11:00 A.M. (E.T.)

Leader: Deborah White, Kentucky State Nature Preserves Commission.

We will visit Flat Rock Glade and maybe Woodburn to see several rare plants on these limestone outcroppings. Deb will discuss these special ecosystems. Easy walk. Call Deborah at work (502) 564-2886 to register or home (502) 875-4754 (on Friday night or Saturday morning for weather questions). Meet at McDonald's in Bowling Green. From the north, take the southern Bowling Green exit, and at the end of the ramp, turn left. McDonald's is on your right. Bring a snack lunch.

Saturday, June 5, 1993 - Adventures along the Rockcastle near London. 10:30 A.M. (E.T.)

Leader Julian Campbell, Botanist for the Nature Conservatory.

This will be a strenuous trip to the Rockcastle River through deep ravines to see prairie-like vegetation on gravel bars. Please call Julian at home (606) 271-4392 after 6:00 P.M. to register for this trip and for weather questions. We suggest you bring lunch. Meet at the parking lot of the Tourist Information Center. From the north, take I-75 south to the northern exit of London (KY Rt. 80). At the end of the ramp, turn right (west). Directly past the first gasoline station on the right is the Tourist Information Center.

Field trip report: Winter at Vernon Douglass Woods

By Joyce L. Porter

Eighteen winter woodland enthusiasts met in Hardin County on Sunday afternoon, January 10, 1993 for a field trip to Vernon-Douglass State Nature Preserve. Led by Tom Bloom, who works for Kentucky State Nature Preserves Commission, we were treated to some informative lessons on identifying trees in their winter dress by such features as bark differentiation and twig analysis.

This is the Knobs Province of Kentucky and, as we followed the deer tracks on the newly constructed trail up the slope, along the ridge line and down again, we got a first-hand look at some of the geological features of this section of Kentucky. Up on top of the ridge we came across some trees where woodpeckers had recently chiseled great crevasses in the trunks. The ground beneath was littered with large wood chips. Farther along the trail there was a section of forest floor with leaves in much disarray, having been thrown up and tossed about by a flock of wild turkeys feeding on the acorn mast. The section of trail that took us to "the pinnacle" gave us a good view of cleared farmland in the valley far below and of other knobs and ridges to the north and west. But perhaps the most startling revelation on this narrow, windswept blade of ridge top was the shape and size of the trees. Here were short, misshapen post oaks, gnarled and broken red cedars, and, in one indentation, was a small cluster of hophornbean (*Ostrya Virginiana*).

It was a hearty group that slipped and slid its way down the last hillside to trails where we were treated to cookies and hot apple cider compliments of Clara Wieland. Kudos to the four ladies from Hindman and Pippa Passes in southwestern Kentucky, Jane Speich, Sr. Audrey Williamson, Dr. Cecile Boehmer, and Sr. Marie Gangwish, who left home at 7:00 A.M. for the drive out to Hardin County. I'm betting the spring wildflowers will be nice there for the trip in April, too.

What's Coming Up In Kentucky

by David Taylor, USDA Forest Service

Spring is around the corner and with it comes a proliferation of showy wildflowers. It is no surprise that this is the season in which most people begin to learn how to identify wildflowers. Spring wildflowers are numerous, eye-catching, and widespread. Many groups of genera or families flowering in the spring come in variations on a theme which allows for quick identification of many plants. The genus *Trillium* is one such example.

In Kentucky one may find as many as 10 or 11 species of *Trillium*, all showy and all with three petals, three sepals, and three leaves. In fact, the name *Trillium* means "three" in reference to the three-parted nature of this lily family plant. The Showy Trillium is a large white-flowered species not uncommon in rich wood of the Knobs and eastward. Red Trillium, also know as Wake-robin or Stinking Benjamin, is often found with Showy Trillium or may be by itself in moist, acid woods. A white form of Red Trillium is often found with it. It has a red ovary at the center of the flower; most of the other white trilliums have white centers. Sessile Trillium is a small plant whose mottled flower sits right on top of the leaves (a sessile flower). It is frequently encountered along streams in limestone areas of Kentucky. Two species with especially beautiful flowers are Painted Trillium and Snow Trillium. Painted Trillium has white flowers streaked with pink and smallish, mottled leaves. It is scattered in Kentucky in the Cumberland Mountains and a few places just east of the Knobs. Snow Trillium is a small plant with pure white flowers. It frequently blooms in February or March, often coming up through snow. It is known from a few places in the Bluegrass. Other trilliums which can be found in Kentucky include Nodding Trillium, scattered in the Bluegrass and elsewhere; Yellow Trillium, scattered in southern and eastern Kentucky; and Large

Toadshade, found in southern and eastern Kentucky.

Other native lily family plants which may be seen in springtime woodlands include Bellworts, Trout Lilies, Yellow Mandarin, Carrion Flower, Solomon's Seal, False Solomon's Seal, Umbel Lily, and Indian Cucumber Root. All of these species are likely to be found in rich, moist areas associated with cove or north slope hardwood forests. Another family well-represented in the spring is the Mustard Family, Brassicaceae. In particular, the genera *Cardamine* (Bittercress) and *Dentaria* (Toothwort), sometimes lumped into just *Cardamine*, provide color and variation in the spring wildflower show. Douglas' Bittercress and Purple Bittercress are found in open wet woods or along marshy stream banks. Most other species of bittercress have small white flowers and are most likely found in gardens or fields and along roadsides. Laciniate Toothwort, Two-leaved Toothwort, and Toothwort are common moist-to-dry woodland species.

Arabis (Rock-cress), while not showy, is a common genus of rocky woodlands. *Draba* species (Whitlow-grass) may also be found in rocky woodlands or on outcrops.

The Buttercup Family, Ranunculaceae, is another frequent component of rich woods. Buttercups (*Ranunculus*) are frequent throughout the state in rich, moist-to-wet woods. They may even be found in small woodland streams. The small-flowered species are usually called crowfoots, e.g., Recurved Crowfoot. The large-flowered species are usually called buttercups, e.g., Hispid Buttercup. Flowers in either group are arranged in fives and are usually yellow. Either the petals or the sepals may be yellow and not all buttercups and crowfoots have both. Anemones (*Anemone*) are usually woodland flowers. One group of anemones consists of small plants with showy white flowers. This group includes Carolina Anemone which grows in rich moist woods. The other group consists of tall plants with small petals. This group includes Tall Anemone, a plant of dry woods and fields. Hepaticas (*Hepatica*), commonly have showy flowers in white, blue or light pink and belong to this family. Hepatica is an early bloomer and is often finished blooming by the end of March. Rue Anemone and Meadow Rues (*Thalictrum*) include spring, summer and fall blooming species. The spring blooming species, Rue anemone, is smaller than the later species. It has small, white flowers on airy stems and has ferny leaves. False Rue Anemone (*Isopyrum)* is similar and is easily confused. The species are technically separated by their fruits. Another genus in the family is *Hydrastis* (Goldenseal). The flower on Goldenseal is beautiful but very short-lived. It is composed of numerous white filiments arranged to make a globe. Under good conditions, it seldom lasts longer than a couple of days. Rain or wind can destroy the flower in a few minutes. The plant is easiest to find when it is in fruit. Look for a big, solitary red raspberry attached to a buttercup plant. You will have probably found Goldenseal. Do not pick the flower or collect this plant. Medicinal collectors have seriously hurt populations of Goldenseal in some areas of the state. It is best not to dig any wildflower, but it is especially true for this one.

Many orchids (Orchidaceae) make their appearance in spring. Red Coral Root (*Corallorhiza*), Showy Orchis (*Galearis*), Twayblade (*Liparis*) and several Lady's Slippers (*Cypripedium*) are found in the spring flora. All but the Lady's Slippers are most likely to be found in moist rich woods. Pink Lady's Slipper is common on sandstone caps and ridges in the Knobs and eastward. It is a species which appears adapted to fire. Where it grows, fires often occur and it flowers more profusely after fire. Yellow Lady's Slipper grows in rocky woods and on rich upper slopes. It, too, appears to be fire-adapted, blooming best after a fire.

Although many do not consider them wildflowers, a discussion would not be complete without mentioning grasses and sedges. Spring woodlands come alive with native bluegrasses (*Poa*). These grasses are thin and often weak-stemmed. They occur in tufts in rocky woodlands, on upper slopes, and on cliffs. Wedgegrass (*Sphenopholis*) is another group of springtime grasses. The genus

Carex (caric sedge) is well represented in woodlands in spring. About 40 species can be identified from springtime woodland collections. Caric sedges look a lot like grasses, but they can be told apart by the shape of their stem cross-section. Grasses are usually round (a few are flat). Caric sedges are usually triangular.

A few weekends in the woods during spring would allow anyone to develop a checklist of at least 200 species and maybe as many as 400 species. Grab a field guide, find a woodlot and begin to learn the plants. Try to learn new species each year as you refresh your memory for ones learned in previous years. Native wildflowers of the spring season are among the easiest to learn. Take advantage of the upcoming show and enjoy the flowers.

Common Spring Wildflowers

Liliaceae (Lily Family)

Erythronium americanum: Yellow Trout Lily
Erythronium albidum: White Trout Lily
Uvalaria perfoliata: Bellwort
Disporum lanuginosum: Yellow Mandarin
Smilax herbacea: Carrionflower vine
Smilax ecirrhata: Carrionflower
Clintonia umbellata: Umbel Lily
Trillium grandiflorum: Showy Trillium
Trillium erectum: Red Trillium, Wake Robin
Trillium sessile: Sessile Trillium
Trillium cuneatum: Large Toadshade
Medeola virginica: Indian Cucumberroot
Smilicina racemosa: False Solomon's Seal
Polygonatum biflorum: Solomon's Seal

Brassicaceae/Cruciferae (Mustard Familly)

Cardamine douglassii: Douglas's Bittercress
Cardamine bulbosa: Purple Bittercress
Cardamine hirsuta: Hairy Bittercress
Dentaria laciniata: Cut-leaf Toothwort
Dentaria diphylla: Purple-leaf Toothwort
Dentaria heterophylla: Toothwort
Draba verna: Whitlow Grass

Ranunculaceae (Buttercup Family)

Ranunculus abortivus: Small-flowered Crowfoot
Ranunculus recurvatus: Beaked Crowfoot
Hydrastis canadensis: Goldenseal
Anemone carolinia: Carolina Anemone
Anemone quinqefolia: Dwarf Anemone
Thalictrum thalictroides: Rue Anemone
Isopyrum biternatum: False Rue Anemone

Orchidaceae (Orchid Family)

Corallorhiza wisteriana: Red Coralroot
Galearis spectabilis: Showy Orchis
Cypripedium acaule: Pink Lady's Slipper
Cypripedium pubescens: Yellow Lady's SLipper
Liparis lilifolia: Lily-leaved Twayblade

Poaceae/Gramineae (Grass Family)

Poa sylvestris: Woodland Bluegrass
Poa compressa: Early Bluegrass
Sphenopholis pensylvanica: Woodland Wedgegrass

Cyperaceae (Sedge Family)

Carex eburnea: Limestone Sedge
Carex blanda: Common Woodland Sedge

Caryophyllaceae (Pink Family)

Stellaria pubera: Starry Chickweed
Silene virginica: Fire Pink

Araceae (Aroid Family)

Arisaema triphylla: Jack-in-the-Pulpit

Natives for Naturalizing

by Sherri Evans, Shooting Star Nursery

This is the first in a new series of articles about how to identify, locate, propagate and landscape with some of the most beautiful and adaptable wildflowers native to this region. Native plants can be used to create more environmentally friendly landscapes with reduced dependency on mowing, irrigation, fertilizers, and other chemicals. By using native plants in our designed landscapes, we help preserve the regional flora and the wildlife that depends on it. We hope these articles will encourage our readers to increase the use of wildflowers in residential, commercial, and public landscapes. The author of this series, Sherri Evans, is the owner of Shooting Star Wildflower Nursery in Frankfort, Kentucky. Ms. Evans has been growing and landscaping with native plants for over 14 years.

Common Name: **Cardinal Flower**
Botanical Name: *Lobelia cardinalis*
Family: Campanulaceae (Bluebell Family)
Life Type: Short-lived perennial
Height: 2-5 feet
Flower Color: Scarlet Red
Bloom Time: July-September (October)
Light: Full sun to partial shade
Soil: Average to fertile, even moisture

Range: Throughout midwestern and eastern North America, as far south as Florida, Texas and Arizona, north into Canada. Statewide in Kentucky.

Habitat: Cardinal flower grows in mesic to wet forest, often along streams and swamp margins and also in wet fields and ditches. In the garden, it will prosper in full to partial sun and average to fertile soils with even moisture.

Description: An extremely showy herbaceous perennial with numerous scarlet red flowers in dense

spikes (racemes) on one to several unbranched, leafy stems. The flowers are tubular and two-lipped, the upper lip 2-lobed with a single tubular stamen tube projecting between the two lobes, and the lower lip 3-lobed. Throughout spring and early summer, the plants exist as basal rosettes of simple, lanced-shaped, toothed leaves. In mid- to late summer, one or more leafy stems bolt upright, producing terminal spikes of flowers. Cardinal Flower often blooms the first season.

Propagation: Cardinal Flower can be grown from seed, by stem cuttings in summer, and by division of the rosettes in spring or fall. Seeds are usually ready for harvest in mid-to-late October. Each flower produces a round capsule containing thousands of tiny reddish-brown seeds. The capsules ripen from the bottom of the spike upward, splitting open at maturity to disperse their seeds by gravity and wind. Ripe seed may be collected by stripping the capsules from the stem or the entire spike can be cut off and placed in a plastic or paper bag when about one-half to two-thirds of the spike has matured. Dry the seed by spreading out stems in a pan in a cool, dry place for several days or more (depending on moisture content at the time of harvest). When dried, seed can be sieved through a fine screen, placed in an air-tight plastic bag, jar, or other container and stored in the

refrigerator (not the freezer). Seed germinates better after a 4-8 week period of moist cold. Fall-planting provides the necessary winter chill, but care should be taken to cover seed to prevent over-winter seed loss. An alternate method is to mix (stratify) the seed with an equal amount of moist, not wet, sand (vermiculite or even a paper towel will also work) and refrigerate for 4-6 weeks prior to sowing. Seed should be examined weekly for mold (it's too wet) or dryness. Seed should be sown thinly inside or outside in a cold frame in late winter. Cardinal Flower is slow-growing until soil temperatures climb to around 70 degrees F. During mild winters and in southern states, basal rosettes will persist in winter and should be kept free of fallen leaves and mulch.

Landscape Uses: Cardinal Flower is a most reliable late season food for hummingbirds, the main pollinators of this plant. It makes an exceptional display in full or partial shade when naturalized in masses at a woodland edge, along a wooded streambank, along the margins of a lake, pond or pool garden, or in a perennial border. Companion native wildflowers for a hummingbird garden include Bee Balm (*Monarda didyma*), Summer Phlox (*Phlox paniculata*), Wild Blue Phlox (*Phlox divaricata),* Wild Columbine (*Aquilegia canadensis),* and Fire Pink (*Silene virginica).* Complimentary garden companions that attract butterflies and songbirds and bloom at about the same time in light or partial shade include Mistflower (*Eupatorium coelestinum*), Joe-pye-weed (*Eupatorium purpureum, E. maculatum* or *E. fistulosum*), Boneset (*Eupatorium perfoliatum*), White Snake Root (*Eupatorium rugosum*), Sneezeweed (*Helenium autumnale*), Narrow-leaved Sunflower (*Bidens aristosa*), Brown-eyed Susan (*Rudbeckia triloba*), Tickseed Sunflower (*Bidens aristosa*), Turtlehead (*Chelone glabra*) and Great Blue Lobelia (*Lobelia siphilitica*). It is sometimes difficult to distinguish Cardinal Flower from the latter species when neither is blooming; the most reliable characteristic we've found is that the leaves of Great Blue extend through the flower spike. Either species sometimes produces a white form which is quite striking. In addition to attracting hummingbirds, Cardinal Flower makes a showy, relatively long-lasting cut flower, but has no fragrance.

References: Phillips, Harry. 1985. Growing and Propagating Wild Flowers. The Univ. of North Carolina Press, Chapel Hill.

The Spurge Family (Euphorbiaceae)

by Jeffrey L. Walck, School of Biological Science, University of Kentucky, Lexington, KY

Members of this family are herbs, shrubs, trees, or rarely vines, usually producing a milky sap. The leaves are mostly alternate and simple or compound. Stipules are usually present, although sometimes reduced to glands or spines. The fruit consists of three united compartments, each containing a single seed. Two major floral types are evident within the family: "euphorbia" and "non-euphorbia".

"Euphorbia type": The flower of this type is actually a "false" flower, consisting of several staminate flowers surrounding a single pistillate flower. The bracts that subtend the staminate flowers are connate and form a cup. The tips of the bracts alternate with nectary-glands that may have a small petaloid appendage. This type of inflorescence is called a cyathium. The pistillate flower at first may be sessile, but its stalk commonly elongates with increasing maturity, so that the ovary eventually hangs out of the cyathium. The blossom formula is 0-0-1-0 for the staminate flower and 0-0-0-3 for the pistillate flower. (Ed. note: The numbers in these floral formulas refer to numbers of sepals, petals, stamens, and carpels, respectively)

"Non-euphorbia type": The flowers are either staminate only or pistillate only; some species are monoecious, with staminate and pistillate flowers on

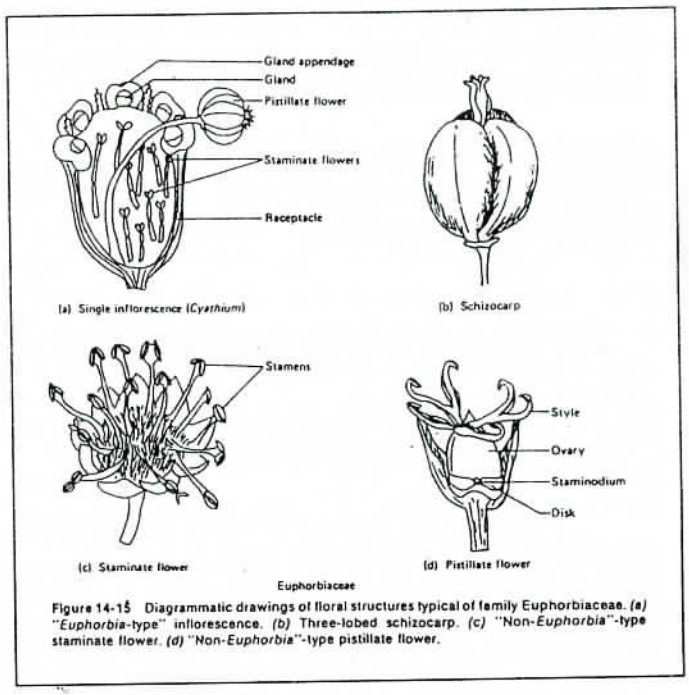

Figure 14-15 Diagrammatic drawings of floral structures typical of family Euphorbiaceae. *(a)* "*Euphorbia*-type" inflorescence. *(b)* Three-lobed schizocarp. *(c)* "Non-*Euphorbia*"-type staminate flower. *(d)* "Non-*Euphorbia*"-type pistillate flower.

Fig. 1. From Jones and Luchsinger, 1979.

the same individual, others are dioecious, with staminate and pistillate flowers on different individuals. The perianth, collectively the sepals and petals, is 5-parted, with one or both of the perianth whorls missing. The staminate flower consists of 5 or more free or united stamens. The pistillate flowers sometimes include staminodia, sterile stamens, but otherwise are like those described above. The blossom formula for the staminate flower is 0 or 5-0-1 to 1000-0, and for the pistillate flower 0 or 5-0 or 5-0-3.

The family includes about 300 genera and 7500 species, mainly of the tropics but extending into temperate regions of the northern and southern hemispheres. In this country, the family is represented by about 225 indigenous species in 25 genera, with the greatest concentration in the southeast. There are 29 species in Kentucky, with the genus *Euphorbia* being the largest in the state and worldwide. Some common euphorbs in Kentucky are Milkpurslane (*Chamaesyce nutans* or *C. maculata*), Flowering Spurge (*Euphorbia corollata*), Three-seeded Mercury (*Acalypha* spp.), and Prairie-tea (*Croton* spp.).

Euphorbias are of economic and medicinal importance. Latex from *Hevea brasiliensis* is the source of Para rubber. Castor-oil, croton-oil, and tung-oil come from the seeds of *Ricinus communis, Croton tiglium,* and *Aleurites fordii*, respectively. Of these only tung-oil is produced commercially in this country. Cassava or tapioca is prepared from the tuberous roots of *Manihot esculenta.* Poinsettia and crown-of-thorns (mostly *Euphorbia pulcherrima* plus other *Euphorbia* species), castor-bean plant (*R. communis*), croton (*Codiaeum variegatum*), and other Otaheite gooseberry species (*Phyllanthus*) are popular garden and house plants. Most members of this family are poisonous and can be fatal if eaten. For example, ingesting *Croton tiglium* causes severe vomiting, diarrhea, gastroenteritis, and delirium. On the skin, it causes irritation, blistering, and is a potent carcinogen. However, Africans apply the sap of *Euphorbia gorgonis* for the removal of warts and relief of toothaches.

Many members of the Euphorbiaceae are highly diversified ecologically as well. Some African species of *Euphorbia* are spiny, essentially leafless, shrubby succulents that resemble cacti. The milky sap and other chemicals that are produced probably protect plants from predators.

Fossils of Euphorbiaceae are known from the Late Paleocene (65 million years ago) and Middle Eocene (55 million years ago) of western Tennessee. The fossils are of flowers which belong to the most advanced tribes in the family and their presence as early as the Paleocene strongly suggests that the family presumably diversified with bee pollinators. Possibly the ancestors of the Euphorbiaceae were insect-pollinated and members reverted back to wind-pollination and then back to insect pollination. This is evidenced by the presence of nectaries and brightly colored bracts (characteristic of insect-pollinated flowers) surrounding the still monoecious and apetalous flowers (characteristic of wind-pollinated

flowers) of the genus *Euphorbia*.

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The Iris Family

By Jim Conrad

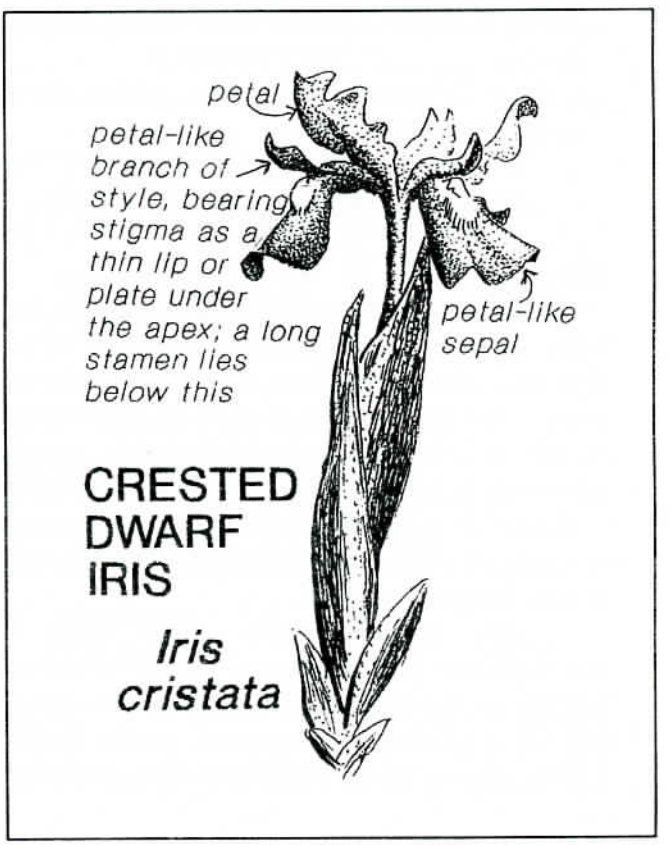
Maybe you're like me in that you don't feel that spring has officially sprung until, in May, you locate flowering populations of wild dwarf irises. Here's how to distinguish Kentucky's two species of dwarf iris:

Dwarf Iris, *Iris verna*, occurs in dry, sandy soil in Eastern Kentucky, stands about a foot high and its leaves are less than 1/2-inch wide; the yellow bands on the 3 flaring lower corolla lobes are smooth; this is the "taller, grassy-leafed species."

Crested Dwarf Iris, *Iris cristata*, found in moist woods throughout the state, except in the Bluegrass; its leaves usually are more than 1/2-inch wide; the yellow bands on the 3 flaring lower corolla lobes have "crinkly" (crested) zones down their middles; this is the "shorter, broad-leafed species."

In June sometimes we find a gorgeous, swamp loving species up to 3 feet tall, the Southern Blue Flag, *Iris virginica* var. *shrevei*. As Kentucky's wetlands have been destroyed, this species has become rarer. When I was a kid in the 60's, large colonies of this plant were often spotted in the bottom of Western Kentucky's drainage ditches, but now channelization and Highway Department mowing have exterminated most of them.

Not all members of the iris family look like irises. Blue-Eyed Grass, *Sisyrinchium* spp., looks like grass stems surmounted with dime-size, blue, hyacinth-like blossoms. Crocuses, Gladioluses, and Freesias are popular ornamental members of the iris



family, none of which grow "iris-type blossoms" -- consisting of 3 upward flaring petals subtended by 3 downward sprawling petal-like sepals.

Let that sink in. Those three recurving "petals" in an iris blossom actually are sepals and sepals, if you'll remember, usually are inconspicuous, green items beneath the showy corolla. This is something special about irises.

Most genera in the iris family, other than *Iris* itself, have funnel-to-saucer-shaped flowers, and usually the "petal-like sepals" look so much like petals that to non-specialists they're indistinguishable from them. Often when a flower's sepals look like petals we say that they're "petaloid."

An iris obviously belongs in the iris family, but how do you know that something like a crocus of a gladiolus isn't a member of, say, the lily or amaryllis families? Well, these three families all form a nice little cluster of similar families; they're all members of the order Liliales, so let's highlight their differences by making a key. Look:

A Ovary superior (colorful parts arising below ovary).....LILY FAMILY
AA Ovary inferior (colorful parts arising above ovary or halfway up it
B Stamens 3 ..... Iris Family
BB Stamens 6 ..... Amaryllis Family

Pretty easy, huh?

But, of course, regular readers of this column know that my big passion with plants isn't what separates one family from the other, or some such thing. To me, botany is just an environment, a milieu, a context or maybe just an excuse for immersing myself in frilly gorgeousness; a plant is a God-poem that touches me deeply; plants are points of sanity on earth, and thinking about them leads me to neat insights.

For example, wild dwarf irises being quintessential spring flowers, I'm led right now to cogitate on the qualitative difference between spring and fall wildflowers. In general, spring flowers are simple, showy, fleshy things and often perfumy. Fall flowers habitually have complexly branched, coarse and scratchy stems, and their individual flowers are small and inconspicuous and don't smell much.

Of course, these features can be explained. Spring wildflowers can blossom early because most species bolt from overwintering bulbs, tubers and corms, and fast-growing herbs covered with frost-protecting waxes and oils simply turn out looking fleshy and simple. Fall-flowering wildflowers similarly reflect anatomical reactions to summer's droughts and hoards of insects; they're wiry-looking and scratchy and I suppose that by fall there are so many insects that a wildflower doesn't have to have much of an odor to receive its quota of bugs.

Moreover, isn't it something that when we humans are in the spring of our lives we're "simple, showy, fleshy...and often perfumy"? But when we grow old, our spirits become imbued with baroqueness and our bodies and souls grow coarse parchment. We humans start out following spring-wildflower strategies, but end up fall-wildflower-like.

On another level, consider that the Big Bang started like a crocus in March's snow; but now the heavens spread above us like sprays of October asters along the roadside.

Nature at so many levels starts out iris-like, but ends up like daisies.

1993 Wildflower Weekend at Natural Bridge

The Kentucky State Parks, the Kentucky Native Plant Society, and the U.S. Forest Service will cosponsor the annual Wildflower Weekend at Natural Bridge State Park on April 30 through May 2. This will coincide with the spring meeting of the Kentucky Native Plant Society and the peak of spring wildflowers in eastern Kentucky. As usual, there will be lots of field trips planned to see native wildflowers, including trips just for photographers and one just for children.

This year's guest speaker will be Fred Case from Saginaw, Michigan, author of *Orchids of the*

Western Great Lakes Region. Mr. Case has taught biology and ecology at Arthur Hill High School in Saginaw since 1953. He is a Research Associate of the Cranbrook Institute of Science and Adjunct Research Investigator of the University of Michigan's Matthaei Botanical Gardens. In addition to his book on orchids, Mr. Case has authored a slide and lecture book on northeastern wildflowers for the New York Botanical Garden. He has received the Outstanding Botanist Award from the Michigan Botanical Club, and the Edgar T. Wherry Award from the American Rock Garden Society. His program on Saturday night at Natural Bridge will be "North American Terrestrial Orchids".

This year's Wildflower Weekend will begin on Friday, April 30 at 8:00 P.M. in the park's Activities Center with a slide program on the wildflowers of eastern Kentucky. Participants may register after 3:00 P.M. at Hemlock Lodge. The registration fee will be $3.00 per person or $5.00 per family.

Wildflower Weekend Schedule

Friday, April 30

3:00 P.M. - Registration table opens at Hemlock Lodge

8:00 P.M. - Evening program on Kentucky wildflowers at the Activities Center

Saturday, May 1

9:00 A.M. - Morning field trips - Meet at Hemlock Lodge

1:30 P.M. - Afternoon field trips - Meet at Hemlock Lodge

8:00 P.M. - Evening Program - North American Terrestrial Orchids by Fred Case at the Activities Center

Sunday, May 2

9:00 A.M. - Morning field trips - Meet at Hemlock Lodge

For more information contact Natural Bridge State Park at (606) 663-2214.

The Kentucky Native Plant Society

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Contents
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The Kentucky Native Plant Society, Inc. was founded in 1986 as a botanical organization for all persons interested in the native flora and vegetation of Kentucky. The goals of KNPS are to serve as a medium of information exchange, to promote native plant conservation, public education in botany, and botanical research in Kentucky. Annual dues of $5.00 (Family $7.00) may be sent to KNPS, c/o Tom Bloom, 900 Keenon Rd., Harrodsburg, KY 40330.

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