The Kentucky Native Plant Society

NEWSLETTER: Vol. 3, No. 1. February 1988. Editor: Julian Campbell.

WINTER BOTANY by Ron Jones (President, KNPS)

There are many botanical activities that one can pursue during the winter months. It takes a bit of study, but with experience there are numerous plants that can be identified in their winter condition. One might think that for the deciduous-leaved trees, learning the species in winter would be a formidable task. Many species, however, are readily identified by the combination of bark and twig characters. The twigs, especially, offer many diagnostic characters: pith type, leaf scar shape, bundle trace number, bud scale type, and bud position. For example, the black walnut is easily recognized by its fuzzy buds, large leaf scars, and chambered pith. Likewise, the diaphragmed pith, encircling stipular scars, and duck-billed buds of the tulip tree are unmistakable. Unlike the leaves, which are easily modified by environmental conditions, these winter twig features are very stable, and thus provide accurate identification for most species. The bark features of color, scaliness, and general texture are also helpful in some species, such as the sycamore, the white ash, and the black locust.

Another avenue of study is the learning of tree silhouettes. These can sometimes be variable, especially between young and old, and forest-grown versus open-grown. Many species when grown in the open will produce recognizable silhouettes, based on the degree of trunk divisions, shape of crown, angle of branches, and amount of twigs. Some species with particularly distinctive forms against the winter sky are tulip tree, black walnut, American elm, weeping willow, and black locust. The evergreen species such as the pines also tend to have distinctive shapes. White pine, Virginia pine, shortleaf pine, and pitch pine are all native to Kentucky, and can be distinguished all year round by their needle and cone characters. All four species of pine can be seen on the trail to Sky Bridge in the Red River Gorge.

Another winter botany activity is the study of fruits. Many fruits can still be found in the winter on such woody plants as tulip tree, tree-of-heaven, sumacs, Kentucky coffee tree, and sweetgum, and on vines such as bittersweet, moonseed, greenbirer, and wild roses, and on herbaceous plants such as jimson weed, milkweeds, dogbane, pokeweed, and cocklebur. There are, in fact, many herbaceous plants in which the stalk remains standing through the winter and retains enough of the leaf and fruit remnants to make the identification possible.

Anyone interested in doing a more scientific study during the winter months might consider surveying the host specificity of mistletoe in their area. This study can be accomplished as follows: select a certain area such as a city or a county, drive the roads and search for trees infested with misteltoe, identify the tree (take a twig sample for documentation), and note the degree of infestation, condition of the tree, and exact location. The study should be conducted during the winter months before the mistletoe begins to fall out in spring. Try to find as many infested trees as possible and calculate which species are the most susceptible. A study of this type could even be written up and submitted to a botanical journal for publication. For further information on these and similar studies, please feel free to contact me at our EKU address.

(Continued overleaf)

For further reading:

-Core, E.L., and N.P. Ammons. 1958. Woody plants in Winter. The Boxwood Press, Pittsburgh.
-Harlow, W.M. 1959. Fruit Key and Twig Key to Trees and Shrubs. Dover Publishers, New York. (This one is under $2.00.)
-Peterson, M.G. 1905. How to know the Wild Fruits. Dover Publishers, New York.
-Petrides, G.A. 1972. A Field Guide to Trees and Shrubs. Peterson Field Guide Series. Houghton Mifflin Co., Boston. (Many tree silhouettes illustrated.)
-Trelease, W. 1931. Winter Botany. Third Edition, Dover Publishers, New York.

REMINDERS

Membership Renewal--Please remember to send in your $3 dues for 1988 if you have not done so. If you are not sure, check your address label; an "88" indicates that you are paid up. There is a renewal form on the back of the newsletter.

Vegetation and Flora Book--The 40 page booklet published by KNPS (see Vol. 2, no.4) is still available but is selling fast. If you want a copy send $2 to our EKU address.

Backissues--If you have recently joined and would like a complete set of backissues, send $.50 for each (there are 8 available). If you have previously requested backissues and not yet received them, please drop us a reminder.

Slide Show Project--We would like to prepare a set of carousels for elementary and high school use on various aspects of Kentucky botany, ie. rare plants, medicinal plants, etc (see Vol. 2, no. 4). If you have slides that you would like to donate, please send them to our EKU address. Also, if you would like to be involved in organizing the carousels please let us know.

Seed Bank Project--Many members have indicated an interest in being involved in our seed bank project. Instructions on how to collect and dry seeds were given in Vol. 2, no. 2. We will have another article on the subject in our May, 1988 newsletter, in time for the seed collecting season. You can be getting ready by locating and monitoring populations this spring, watching for fruit maturation. Pat Haragan is moving to Louisville, so do not send any seeds to the UK address as previously given. For the time being, we will accept the seeds at our EKU address until a more permanent arrangement can be made. If you would like additional information now, just drop us a line.

TOMMY BEAUCHAMP

With great sadness, we learnt recently that Mrs Tommy Beauchamp died this winter. An active new member in KNPS, we had barely gotten to know her. Showing continual enthusiasm and courage, while becoming sick, she kept up regular Thursday morning walks at Raven Run Nature Sanctuary (Fayette County), with Willem Meijer and others in the regular group. She did leave us with a memorable thing - she told us about a patch of the majestic Royal Catchfly (Silene regia) near her family's home in the Howe Valley area of Hardin County. This plant is extremely rare in Kentucky (and also a candidate for Federal protection). We hope that some of this species in the Hardin County area can eventually be included in a nature preserve that will bear her name. Ed.

FIELD TRIP SCHEDULE AND OTHER EVENTS (arranged by Marc Evans/phone 502-564-2886)

19th March (Saturday). KNPS ANNUAL MEETING AND FIELD TRIP AT OTTER CREEK PARK, MEADE COUNTY. Meet at 10:30 a.m. (eastern time), in the Otter Creek Park restaurant. The annual meeting will be held to discuss future plans for the society and to vote for officers (see nominations below). Following the business meeting, Julian Campbell will give a slide show on the rare plants and unusual vegetation that he and Max Medley found during 1987, working on an inventory of the Somerset District, Daniel Boone National Forest. They found about 10 species with no previous published record in Kentucky, including a goldenrod lost elsewhere in its range but now rediscovered here, and an aster that is new to science. This uniquely intensive inventory showed how much can still be discovered in this state. We will then break for lunch, and the restaurant is excellent. Afterwards, Richard Cassell (502-458-4044) will lead an easy to moderately strenuous field trip in the park, searching for the rare and elusive snow trillium (T. nivale) that has been reported here, but not verified. Accomodation is available at Otter Creek Park (Vine Grove, KY, phone (502) 583-3577) and there are many motels nearby.
DIRECTIONS: The park is located about 25 miles southwest of Louisville.
Take US 31W/US 60 through West Point, if coming from Louisville, or through Radcliff, if coming from Elizabethtown, until you come to the junction with KY 1638. Take KY 1638 and follow signs to the park, meeting at restaurant.

9th April (Saturday). JESSAMINE (CREEK) GORGE, JESSAMINE COUNTY. Due to popular demand, we will have another field trip to this outstanding natural area, led by Julian Campbell (606-271-4392) and Marc Evans. However, we will go in a different section, to the area owned by The Nature Conservancy (non-TNC members welcome, but expect a sales pitch if you are one). Meet at 10.00 a.m. in the parking lot of Bethel Church on KY 1268. The hike may be moderately strenuous for those who want to go far, but much can be seen by easy walking along an old road and the flat bottomland. There should be a wealth of floral display here, including vast beds of white trout lily (Erythronium albidum). Large patches of wild hyacinth (Cammassia scilloides) and the sky-blue phlox (Phlox bifida) also occur here, though probably not flowering at that time. Other rare species known here may be seen (including snow trillium), though we will not take a large group to the sensitive areas. Bring lunch.
DIRECTIONS: From Nicholasville (south of Lexington on US 27), take US 27 south for about 4 miles, then take KY 1268 west for about 2 miles to Bethel Church, which is on the south side at the junction with Phillips Lane (just past Shun Pike). From Wilmore (south of Lexington off US 68), take KY 1268 east for about 4 miles, crossing Jessamine Creek, to the church.

14th May (Saturday). CENTRAL KENTUCKY WILDLIFE REFUGE, BOYLE COUNTY. Susan Studlar (606-236-5211) the leading bryologist (an expert on mosses and liverworts) of Kentucky (from Centre College) , will lead a hike for mosses, ferns and wildflowers through this beautiful forested area of the Knobs, featuring deep moist forests and dry grassy woods on limestone hilltops. Meet at 10.30 a.m. in the refuge. The hike will only be slightly strenuous, but we may get our feet wet, so be prepared, and bring a lunch.
DIRECTIONS: From Danville, take KY 34 west for about 8 miles to Parkesville. Then take KY 1822 south for 3 miles to KY 37. Turn right (west) on KY 37 for about half a mile, then turn left (south) onto Carpenter's Fork Road. The refuge is a short way up the road on the left. Look for small green sign.

Looking ahead: on 17th-20th July this year, the THIRD ANNUAL HERB GROWING AND MARKETING CONFERENCE will be held in Louisville, Kentucky. Contact Dr. James Simon or Laura Clavio at (317) 494-1328, Department of Horticulture, Purdue University, West Lafayette, Indiana 47907.

NOMINATIONS FOR OFFICERS (from Carol Baskin, Chairing Nominations Committee)

The following people will be voted on at the upcoming annual meeting:

President: Ron Jones (Dept. of Biology, Eastern Kentucky University).
Vice-president: Marc Evans (Kentucky Nature Preserves Commission).
Secretary: Charles Chandler (MER Advertising, Lexington).
Treasurer: Kathleen Jones (Dept. of Biology, Eastern Kentucky University).
Board Members: Jerry Baskin (School of Biol. Sci., University of Kentucky).
Richard Cassell (Kentucky Natural History Society, Louisville).
Danny Barrett (Army Corps of Engineers, Jackson)
Hal Bryan (Department of Transportation, Frankfort).

KENTUCKY SQUIRRELS AND NATIVE PLANTS by Charles Elliott

In an attempt to relate the importance of certain native plants to Kentucky wildlife, I have somehow managed to miss discussing one of the most popular groups of animals in the state - the tree squirrels. When I refer to tree squirrels, I'm talking about the familiar gray-colored Gray Squirrel (Sciurus caroliniensis) and the larger, orange-bellied Fox Squirrel (Sciurus niger). Most people are familiar with tree squirrels, either as animals to hunt or as the busy, inquisitive little animals that live in the tree next to your house. Most people know of the squirrel's dependence on acorns and assume that is all they eat. However, both species of squirrels consume a wide variety of foods and readily take advantange of unusual food sources.

Fox squirrels prefer hickory nuts, acorns, corn and black walnuts. Fox squirrels have been found to be so dependent on these food items in Ohio, that if two or more of them are missing, the squirrels may be absent from the area. Fox squirrels also consume buckeyes, seeds and buds of maple and elm, hazelnuts (Corylus), blackberries (Rubus), osange orange fruits (Maclura), mulberries (Morus), and the buds and seeds of aspen and willow. In Ohio, research has shown that fox squirrels have a preference for acorns, with the preference depending on the species of oak producing the acorns. The general order of preference, beginning with the most liked, is: white oak (Quercus alba), black oak (Q. velutina), red oak (Q. rubra).

Squirrels depend opon the food cached during the fall for survival during the lean months of winter. Studies of fox squirrels have shown that of all food items stored in the fall, only 10% were used by the beginning of January, but over 99% were used by May. Winter food caches of fox squirrels have been found to contain corn, seeds of false buckwheat (Polygonum scandens), and fruits of osage orange, basswood, pines, ash, pawpaw (Asimina triloba), blackberry and bittersweet (Celastrus), rosehips (Rosa), haws (Crataegus) and wild grapes (Vitis).

Fruits, seeds and bark of many trees are also important food items for gray squirrels. Fruits of magnolia (Magnolia grandiflora), hawthorn, cherry and apple pulp, honey locust seeds, horse chestnuts (Aesculus hippocastaneum), pussy willow catkins, maple and elm seeds, and sycamore buds are all consumed. Buds and bark of maple trees are also eaten. Scraping the inner bark of maples to get at the sweet sap can be extensive. The bark of many trees is consumed, including chestnuts (Castanea), chestnut oaks (Quercus prinus) and white oaks. Fungi are also an important gray squirrel food item. Squirrels will devour many species of mushroom.

CUMBERLAND SANDWORT: KENTUCKY'S NEXT FEDERALLY ENDANGERED PLANT by Hal Bryan

For thousands of years, the rockhouses of eastern Kentucky have been used by many species of both animals and plants. Prehistoric native Americans huddled under these cave-like overhangs of sandstone rock to escape the bitter blasts of winter and the seering summer heat. Many kinds of ferns and flowering plants have also found these rockhouses to be hospitable habitats, where high humidities and cool temperatures provide sheltered sites with little competition from other species. Several plants, like round-leaf catchfly (Silene rotundifolia), white-haired goldenrod (Solidago albopilosa) and Lucy Braun's thoroughwort (Eupatorium luciae-brauniae), have developed into distinct species, with mechanisms to make use of this unique micro-environment. Cumberland sandwort (Arenaria cumberlandensis) is one of the rarest rockhouse residents, and has recently been proposed as a federally endangered species.

This small plant is a member of the pink family (Caryophyllaceae), and is related to the yard weed, common chickweed (Stellaria media), which it resembles somewhat. It is about 4 to 6 inches tall, with narrow opposite leaves, and with tiny (1/4 inch) white five-petaled flowers. Cumberland sandwort is known from only five sites in the world, four in Tennessee and one in Kentucky, all in the unique rockhouse habitat of the Cumberland Plateau. The species was unknown until it was described as a new species in 1979. Eugene Wofford, from the University of Tennessee, and Robert Kral, from Vanderbilt University, reported it from the four sites in northeastern Tennessee, and our own Max Medley, from the University of Louisville, discovered the Kentucky population, while botanizing in the Daniel Boone National Forest near the Tennessee line in McCreary County.

Unlike other members of the genus Arenaria, which bloom in full sun, Cumberland sandwort requires the shady conditions of the rockhouse habitat. These low light levels may be responsible for the fewer flowers of this species, which appear later in the year than other Arenaria species, during late June to early July. Clearcutting, that would allow light to stream into these shady refuges, may dry the species out of existence. It also appears that professional and amateur "pot hunters" have destroyed some of the plants, while digging in the rockhouses for artifacts of earlier human cultures. Hikers and campers also have the potential for threatening the continued existence of the easily-overlooked plants.

When Cumberland sandwort is listed as an endangered species, it will become the Commonwealth's fourth federally protected plant. These include Short's goldenrod (Solidago shortii) and running buffalo clover (Trifolium stoloniferum), both associated with locations of the large buffalo herds in pre-settlement Kentucky. The other is white-haired goldenrod (Solidago albopilosa), of the Red River Gorge area, which has been officially proposed as an endangered species, but will probably be listed as federally threatened rather than endangered. It too, like the Cumberland sandwort, is a rockhouse resident. Kentucky's next endangered plant will likely be a rare rockhouse endemic also - Lucy Braun's thoroughwort (Eupatorium lucaiae-brauniae).

So the next time that you're hiking or camping in some of these remote rockhouses, consider the plants that have adapted to these secluded sites and survived there for millenia before "civilization" came to our Commonwealth.

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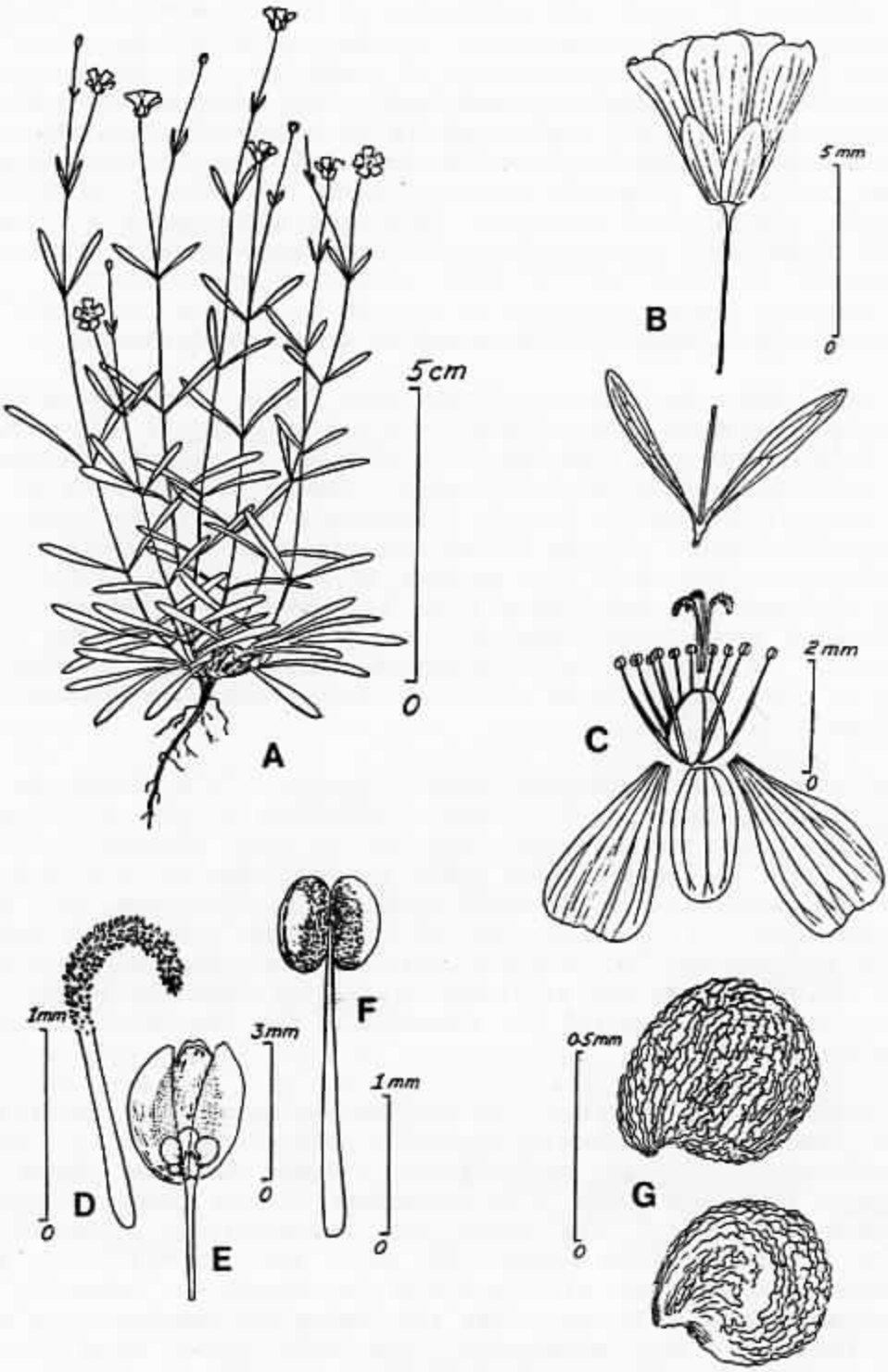


Cumberland sandwort (Arenaria cumberlandensis), taken from the original description of Wofford & Kral (1979, Brittonia 31:258). A = whole plant; B = flower; C = dissected flower, showing two petals and a sepal; D = a stigma; E = a capsule (fruit) with seeds; F = an anther; G = seeds.

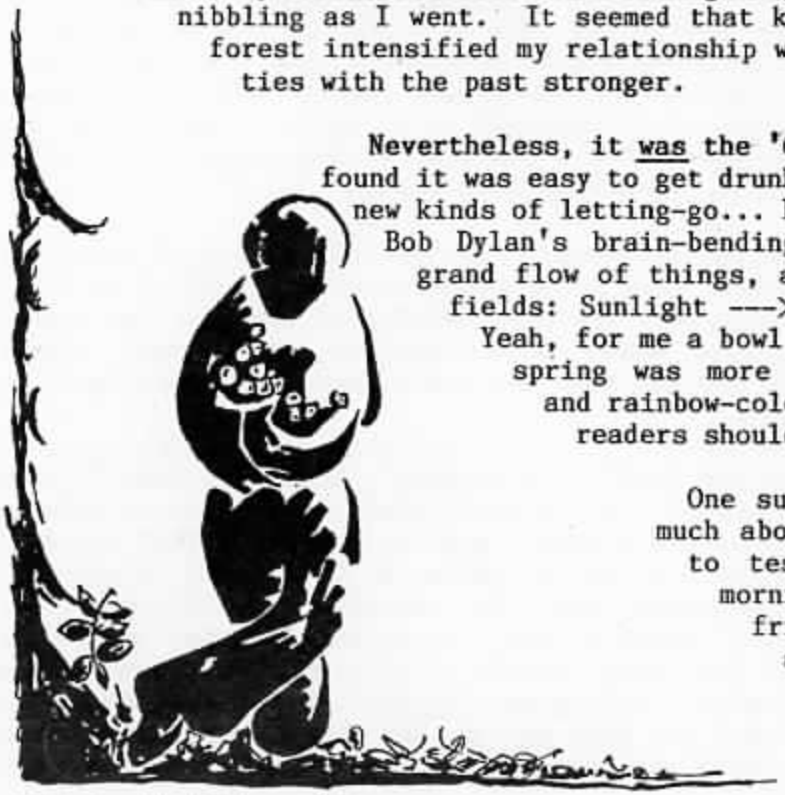
ADVENTURES IN EATING THE KENTUCKY FLORA by Jim Conrad

During the 1950s, growing up on a small farm here in Western Kentucky, I learned the basic rule for "living off the land": <u>everything has its season.</u>

About the time geese started flying south, my family would pile into the old pickup truck and head for what we called "the newground" - the part of our farm still in transition from bottomland swamp to tobacco patch and cornfield. Our destination was a cluster of tall shagbark hickories, beneath which we'd look for "hickernuts." We'd find the nuts more with our feet than with our eyes, for the nuts would be blanketed with a dusty jumble of leaves. To our way of thinking, fall was never official until we'd gotten this ceremony out of the way. Later, coaxing the meat from those nuts would be the main activity of many a dreary winter day.

In the spring, as soon as our year-end feelings somehow were replaced by starting-all-over feelings, my Papaw Conrad would ask my dad to dig him some sassafras, specifying the red kind. "Sitting inside all winter, a man gets clogged up inside," he'd say. "That sassafras'll thin out my blood and I'll feel better." And really it seemed to work. Later in spring, some morning my Grandma Taylor in Calhoun would call us, reminding us that the poke was about right. That weekend we'd drive around to various brushpiles and cut poke greens, which looked exactly like green, translucent rabbit-ears perkily poked up from the earth. Of course, also there were blackberries for jams, wild grapes for jellies, black walnuts for Christmas candies, pawpaw for picking up, and other items, each with its own season and appropriate ceremony.

During the rollicking '60s, college life at Western in Bowling Green was quite a shock for this farmboy who wasn't even friendly with indoor toilets, and who'd always lived on a gravel road. Every weekend for four years I returned to the field and woods and family of McLean County; nothing undid my tensions better than taking long walks, identifying plants, and nibbling as I went. It seemed that knowing what I could eat in the forest intensified my relationship with things natural, and made my ties with the past stronger.



Picking Up Hickory Nuts

Nevertheless, it <u>was</u> the '60s, and, like my schoolmates, I found it was easy to get drunk on new feelings, new thoughts, new kinds of letting-go... But, while other kids grooved on Bob Dylan's brain-bending prose, I tripped out on the grand flow of things, as expressed by the forests and fields: Sunlight ---> plants ---> me ---> poetry... Yeah, for me a bowl of watercress from a streamside spring was more psychedelic than rock-and-roll and rainbow-colored pot-smoke. [Impressionable readers should proceed with caution - Ed.]

One summer, I decided that I knew so much about edible plants that I needed to test myself. So one mid-summer morning I parked my old pickup at a friend's place in Nelson County, announced that I'd be back in a week or so, and wandered into the forest carrying nothing but a blanket, a pocket-knife and Walt Whitman's <u>Leaves of Grass</u>.

Well, knowing about blackberries does no good if the blackberries already have fallen off; knowing about pawpaws is no help in mid-summer. That week, the trees and wildflowers admonished me for having forgotten that everything has its season; and for ripe fruits, starchy tubers and succulent greens, usually that season isn't mid-summer.

I was, and am, a vegetarian abjuring all flesh, and that includes fish; I got hungry pretty quickly. By the third day, I was gouging strips of inner bark from the trunks of pitch pine. This tasted like turpentine and instead of falling apart when it was chewed, it just became a pulpy ball that went down real hard. However, as soon as the ball hit the stomach, it caused a "being fed" sensation. By the fourth day I could just look at a pitch pine and salivate. On the fifth day I found an abandoned sawmill with a huge pile of rotting sawdust. The sawdust was covered with thousands of pear-shaped puffballs, Lycoperdon pyriforme. Though when raw they offered a slightly acrid taste, I ate them raw, and was glad to have them. During my final days in the forest, I never travelled more than a mile from my sawdust pile; I even slept on it at night, and enjoyed many a pear-shaped puffball late-night snack.

My experiences with mushrooms have not always been so gladsome. A couple of summers later I was wandering through the woods near home when I met with the deadly destroying angel, Amanita bisporigera. Of course I know not to pick it for eating, but I did touch it. After walking away from it I found a fine colony of oyster mushrooms, Pleurotus ostreatus, on a dead stump. These I picked, even eating a few raw ones on the spot. Before long I became sick; for a week afterwards I was unable to eat much because of a terrible coppery taste in my mouth. I believe a little of the Amanita's toxin must have stuck to my hands and entered my stomach by way of the raw Pleurotus I ate later. Those Amanitas deserve our respect...

Nor are mushrooms the only plants that have thrown me for a loop. Once I realized that I'd never tried lamb's-quarter, Chenopodium album, though it's a common weed in rich soils. From around our barn I collected a mess, cooked it as if it were spinach, baked some cornbread to go with it, got out the butter, and prepared for the feast. I regretted throwing away the Vitamin C-rich water in which the herb had been cooked, so I resolved to drink it. Everything was delicious, except that the drink was bitter. However, I saw sunlight ---> plant ---> me ---> poetry in my glass, so I drank it with relish.

Almost immediately I began feeling sleepy. Against all custom, I slept the entire afternoon, and awoke at dusk with perhaps the worst headache of my like, and it was a corker. I'm guessing that something must have been in the drink. Since that first experience, I've eaten lamb's-quarter many times, always sending the green liquid left in the pot down the drain, and I've experienced no more problems.

Can a vegetarian "live off the land" in Kentucky? I believe that I could do it, but it would be a full-time job. By no means could I survive healthfully by just walking around every day with a blanket, a pocketknife and Walt Whitman. Twice I've tried this approach (with different authors) in forests in which I knew beforehand that at least something would be available, besides the inner bark of pine trees. A couple of summers back, in Germany, I fed mostly on blueberries. Another time, in the Peten Jungle of Guatemala, I survived on sapodilla, Achras zapota, and mamey, Calocarpum sapota. Always I avoided an empty stomach, but the dependence on just one or two foods caused digestion problems, and my nutritional balance was terrible.

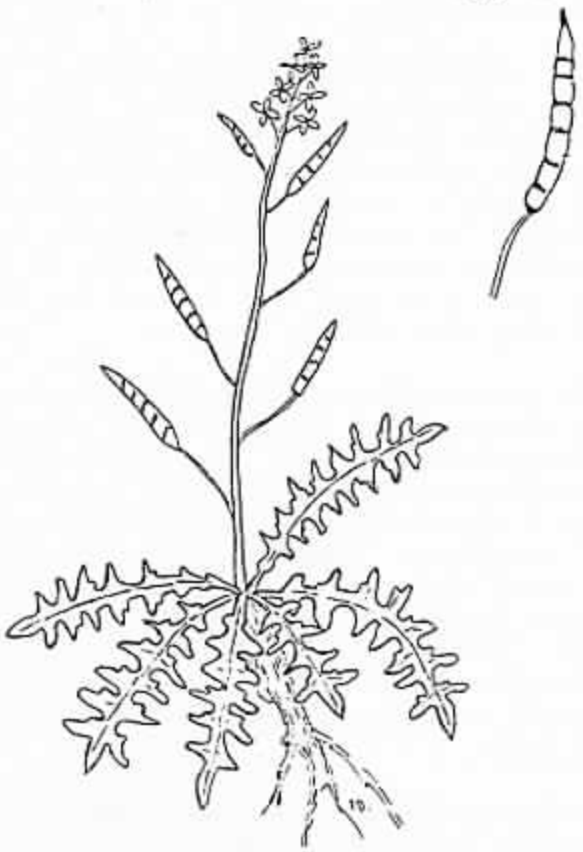
To survive in the forest as a healthy vegetarian, you need to invest all of your time in gathering and, especially, properly preserving your finds. Pickling your poke, cellering your nuts, roasting your tubers, flouring your Soloman's seal roots... It might be fun for a while, but there'd be no time for poetry.

Of course, you can buy several "living-off-the-land" books at nearly any mall bookstore. When those authors speak of the ease with which we may go wandering across the landscape, nibbling nonchalantly as we go, sometimes I wonder if they've ever really seriously tried it for long periods of time. The one book that has managed to hold my respect over the years is EDIBLE WILD PLANTS OF EASTERN NORTH AMERICA, by M.L. Fernald (the guy who edited the current GRAY'S MANUAL OF BOTANY) and A.C. Kinsey, revised by Reed Rollins (Harper & Row, Publishers, New York, 1958).

Why not try this intensely personal manner of interacting with the land and its plants? But, if you do, please keep these items in mind: Don't eat anything that's so rare or gorgeous that it should be left to live in dignity; be sure about your identifications, because a goodly number of our species really are poisonous, and; be sure to let this realization, which almost is a kind of prayer, work its magic on you as you chew and swallow: Sunlight ---> plants ---> you ---> poetry...

PAT'S WEED PATCH by Patricia Dalton Haragan/Julian Campbell*

Sibara virginica (or Arabis v.) is a frequently overlooked native weed in the mustard family (Cruciferae or Brassicaceae). It doesn't seem to have a common name, at least in Kentucky, so let's just call it "sibara." It is related to the rock cresses (Arabis spp.), including the common rock cress of rock outcrops and thin soil in dryish woods (A. laevigata). Like other winter annual cresses, it has an overwintering rosette of leaves, which are divided into narrow segments with a small protrusion near the base of each leaflet. The small flowers have four sepals and four whitish-pink petals. The fruit is a silique (like mustard pods) about an inch long, stiff, broad and flattened, on stout ascending stalks. This species occurs in lawns, gardens, old fields and cultivated fields, and other waste areas. It is native to the southeastern U.S.A., but in the primeval environment, such native weedy species must have been restricted to small disturbed areas caused by Indians, buffalo and other natural factors. Even a lowly old weed like this must have a evolutionary tale to tell. If only genes could talk.



*Pat will be temporarily preoccupied by a little patlet (expected in September). Meanwhile, if anyone wants to contribute notes on their favorite weeds or any other plants, with pictures, please don't be bashful - just send them in. Ed.

BLACKBERRIES AND THE DECLINE OF TAXONOMY: COLLECT RUBUS? WHY NOT? by Wayne Davis

As the molecular fad advances, it tends to crowd out people who are interested in plants and animals; as the old retire, they are not replaced. Thus, you are less likely to be able to get something identified today than 40 years ago. Perhaps more people are working, but fewer know what they are working with or what is available to work with.

A good example of this problem concerns the species in the genus Rubus, facultative apomicts (producing seeds with unfertilized, yet viable eggs) that are probably the most difficult of all plant genera. Over 400 species of this fascinating genus have been described from eastern North America, and even more in Europe. Several of our most eminent plant taxonomists, including M.L. Fernald and Liberty Hyde Bailey, spent a substantial portion of their time studying Rubus. I remember in the fairly recent past when there were several people who could identify a North American blackberry for you. They included Bailey, Albert Fuller of the Milwaukee Public Museum, and my parents, Dr. Hannibal and Tyrecca Davis. Today, among the 4.7 billion people on earth, there is only one who can reliably identify a briar for you, my 86 year old father. He has recently completed the Rubus section for the big cooperative project on the flora of the Southeastern United States.

Recently, I heard that Mr. Henry Converse, the tester for blackberries for the North American Fruit Explorers, had an interesting and productive berry that had been discovered near Rockport, Indiana. Specimens had been sent to five herbaria for identification, without success. I wrote to Mr. Converse and suggested he contact my father, who identified the briar as Rubus bifrons, a distinctive species that had been imported from Europe by the nursery trade and established at several localities in the U.S.

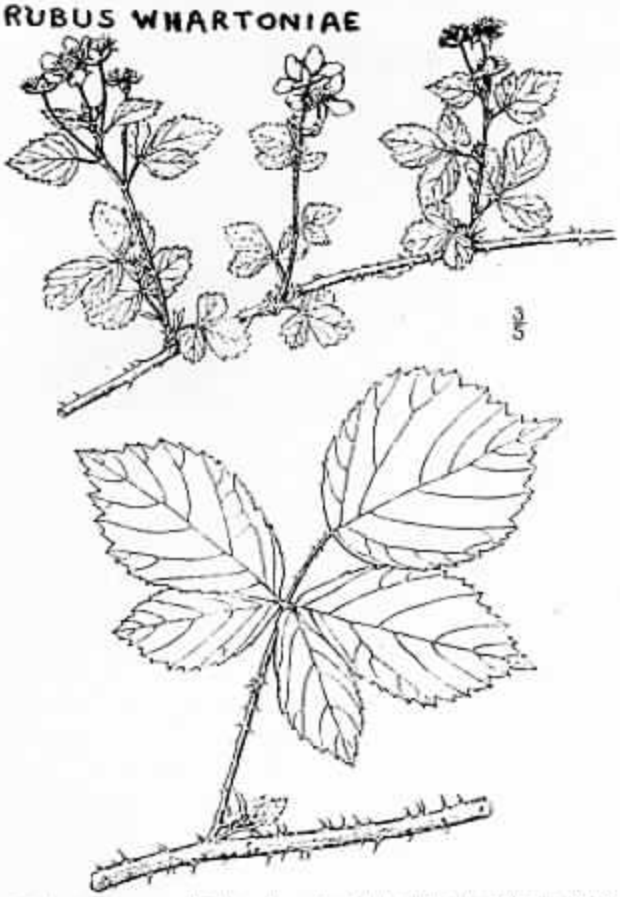
The blackberries and dewberries are not popular with field botanists. The thorny devils are nasty to handle, and the group has the reputation of being taxonomically hopeless. However, with today's knowledge this reputation is undeserved. The group offers perhaps the best opportunity to discover species new to the state, for Kentucky is the most poorly represented of all the eastern states in Rubus records. My father's recent revision leaves Kentucky with probably a dozen or so species, whereas probably something like 30 exist in the state. This is not a hopeless number to learn; in our last newsletter, Jim Conrad told us there are probably at least that many asters.

The group can now be understood by the herbarium taxonomist because of the work of my parents and Albert M. Fuller. These folks spent decades studying Rubus before they began to publish, and were finally able to bring order to the more than 500 names applied to the natives of eastern North America. Many type specimens (original specimens used to name a species) are parcifronds (unusual flowering branches on primocanes) or novirames (freakish growths from winter-killed plants). Many names were based upon poor fragmentary material, and with two species confused in the original description of one! In a series of papers in Castanea (1967, 32:20-37; 1968, 33:50-76; 1969, 34:157-179; 1969, 34:235-266; 1970, 35:176-194; 1982, 47:216-219), Fuller and the Davises cleared up most of these problems. Anyone interested in herbarium taxonomy cannot read these papers without getting excited about Rubus.

The most important steps in identifying a Rubus take place before the specimen is collected. Good material with an informative label is needed. A specimen must include sections of both the floricane (flowering cane in its second and final year) and the primocane (non-flowering cane in its first year). To avoid mixing species take both canes from the same root. Take a generous

section from the middle of the primocane; the underdeveloped tip is of little value, although it may be included to show tip-rooting when that occurs. Press and mount material so that both upper and lower leaf surfaces are evident. Since Rubus species are conspicuous in flower, most collectors have taken them at that time. However, the primocanes are often immature at this stage, in which case collection should be deferred. Best collections are made in the green fruit stage.

Avoid collecting from single plants which may not persist; collections should generally be made from a good well-established colony. Rubus species are facultative apomicts; fertilization with pollen from rosaceous (rose-family) plants is necessary for development of the endosperm (initial nutrition for the embryo), but the egg nucleus may or may not be fertilized. Thus, hybrids can often reproduce without successful meiosis and fertilization, producing new species (see Castanea 23:52-55, 1958). To collect and name such plants only adds to the confusion; one should describe as new only those species which are well-established and have a significant geographical range. You can contribute much to our knowledge of Rubus in Kentucky just by collecting the same species at different localities. Before collecting, carefully examine the entire colony. Be alert to the fact that a briar patch often contains several species. Avoid collecting freakish material, such as a plant stunted by a virus or a blooming shoot from a primocane. If a single specimen is taken, try to select it as typical of the colony.



15. Rubus Whartoniae. Well-armed bramble with abruptly acute primocane leaflets as seen at bottom. Black Shale region of Kentucky.

From L.H. Bailey's paper in Gentes Herbarum 5:358. This species is one of the rarest in Kentucky.

Note on the label any relevant environmental conditions, such as "dry clay bank" or "growing in partial shade in the woods." Occasionally, a colony will show a clinal variation from dwarf plants on a dry bank to a luxuriant form in partial shade of moist woods. In such cases, several specimens should be taken and the situation described on the label. Some Rubus species are long trailers, growing prostrate on the ground. Some are nearly erect. Others arch over and tiproot, and still others form dense stands. Since these characteristics are not evident in herbarium specimens, it is important to note growth form and plant size on the label. And of course the label should have the date and specific locality, if possible precise enough that someone else could locate the colony.

I would like to hear from anyone who is interested in doing a study of the Rubus species in a county or region of Kentucky. [School of Biological Sciences, University of Kentucky, Lexington, KY 40506.]

KENTUCKY NATIVE PLANT SOCIETY
Department of Biological Sciences
Eastern Kentucky University
Richmond, KY 40475

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