

NATIVE PLANT SOCIETY OF NORTHEASTERN OHIO

Founding Chapter Of

THE OHIO NATIVE PLANT SOCIETY

6 Louise Drive

Chagrin Falls, Ohio 44022

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On the Fringe

THE JOURNAL OF THE OHIO NATIVE PLANT SOCIETY

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No. 5

ANNUAL DINNER

SATURDAY, NOVEMBER 10, 1990

The Annual Dinner will be held on Saturday, November 10, 1990 at the Cleveland Museum of Natural History. Festivities will begin at 5:30 p.m. with a wine and punch hour. Dinner will be at 6:15 with the usual short business meeting following at which time the annual awards will be made. The lecture will be at 8 o'clock. This year, Dr. Warren Stoutamire of the University of Akron will be our speaker. His subject will be "Propogating Native Ohio Orchids." An internationally known orchid expert, Dr. Stoutamire has done field work in Australia, South Africa, all over the United States, and in other countries. Experiments on orchid propagation are difficult, too often resulting in failure. But more scientists are becoming involved in this fascinating field and it may be the only way we can save a plant family that is becoming more endangered each day. Reservations may be made by sending \$10 to: 6 Louise Drive, Chagrin Falls, OH 44022. Make checks payable to Ohio Native Plant Society. **DO NOT SEND 1991 DUES!**

CALENDAR OF VARIOUS CHAPTER ACTIVITIES:

Please call chapters if you wish to join them in an activity - phone numbers are listed after the calendar.

SNP = State Nature Preserve

Sept. 8 (Saturday) 1 p.m. - Springville Marsh SNP. Late Summer Hike. Many plants and animals wait until this time of year to perform at the marsh. Come and identify some of the inhabitants.

Sept. 8 (Saturday) 12 p.m. - Little Beaver Creek Chapter. Mushroom Census. Meet at Gaston's Mill. Mushrooms will be collected throughout the county and brought back for identification.

Sept. 8 (Saturday) 10 a.m. - Dayton Chapter. Meet at Hayes Arboretum in Richmond, Indiana. Talk and slide program on Propagation of Wildflowers by Dr. Ralph Reitz of Hayes, then a tour of the Arboretum.

Sept. 8 (Saturday) 2 p.m. - Wilderness Center Chapter. A Prairie Walk at the Wilderness Center with the TWC Botanizers.

Sept. 8 (Saturday) 8:30 a.m. - Athens Chapter. A field trip to the Chaparral State Nature Preserve in NW Adams County. This is an excellent example of a little Bluestem Prairie.

Sept. 14 (Friday) 7:30 p.m. - Cincinnati Chapter, Avon Woods Educational Center. Members slides - review of the past year's best pictures of flowers and scenic vistas.

Sept. 15 (Saturday) 1 p.m. - Old Woman Creek SNP. Estuaries Day. This is a nationwide celebration of estuaries of this country.

Sept. 15-16 (Saturday & Sunday) 8:30 a.m. - Athens Chapter. Overnite trip to explore Subalpine Red Spruce/Balsam Fir forests and nonforested balds in the vicinity of Spruce Knob, WV. Camping trip limited to 10.

Sept. 16 (Sunday) 2 p.m. - Mohican Chapter. Hike at Black Hand Gorge and Flint Ridge.

Sept. 17 (Monday) 7:30 p.m. - Dayton Chapter, Cox Arboretum. Lecture on Prairie Seed Production by Kevin Kepler.

2 **Sept. 22 (Saturday) 9 a.m. - Prairie Road Fen SNP.** As Fall approaches, the prairie grasses of this fen, one of the largest prairie fens left in Ohio, reach their peak.

Sept. 25 (Tuesday) 7 p.m. - Little Beaver Creek Chapter, Beaver Creek State Park. Carol Mears will present a program on Mosses and Liverworts.

✓ **Sept. 27 (Thursday) 7:30 p.m. - Cleveland Chapter, Holden Arboretum.** Dr. Walt Macior has been studying the louseworts (*Pedicularis*) in the Himalayas. He has discovered interesting new information about these plants and has scenes to show us from this part of the world.

- Sept. 29 (Saturday) 8:30 a.m. – Athens Chapter.** Dr. James Cavendar will lead a mycological excursion to a Big-Tooth Aspen/Oak forest. The sandy soils provide suitable habitat for a diversity of fungi including the edible scabrous stalk, *Leccinum scabrum*.
- Oct. 6 (Saturday) 9 a.m. – Dayton Chapter.** Prairie remnant work project at Beaver Creek Prairie.
- Oct. 7 (Sunday) 1 p.m. – Little Beaver Creek Chapter.** Field trip to Pine Hollow.
- Oct. 7 (Sunday) 2 p.m. – Wilderness Center Chapter.** Tree identification hike at the Center.
- Oct. 12 (Friday) 7:30 p.m. – Cincinnati Chapter, Avon Woods Educational Center.** Dr. John Thieret, eminent Kentucky botanist and author, will speak on "Poisonous Plants".
- Oct. 13 (Saturday) Little Beaver Creek Chapter.** Geology/Fossil field trip. Place and time to be announced. **Call for details.**
- Oct. 13 (Saturday) 8:30 a.m. – Athens Chapter.** Walking trip in Lake Hope State Park in the hills of Vinton County.
- Oct. 13 (Saturday) 10 a.m. – Clifton Gorge SNP.** Fall hike to catch the last of the color and see the impressive cliffs of the gorge which have been hiding behind all those leaves.
- Oct. 14 (Sunday) 2 p.m. – Mohican Chapter.** Hike at Mohican State Park.
- Oct. 14 (Sunday) 2 p.m. – Goll Woods SNP.** Annual Fall Color Walk.
- Oct. 14 (Sunday) 3 p.m. – Gross Woods SNP.** Hike in the woods to observe the many changes that take place as the residents of the woods prepare for winter.
- Oct. 14 (Sunday) 1 p.m. – Fowlers Woods SNP.** Walk in the woods to see the Fall colors.
- Oct. 15 (Monday) 7:30 p.m. – Dayton Chapter, Cox Arboretum.** A slide tour of Adams County with Paul Knoop.
- Oct. 20 (Saturday) Wilderness Center Chapter.** All Day field trip to Beaver Creek State Park. Call for details.
- ✓ **Oct. 20 (Saturday) 9 a.m. – Cleveland Chapter.** Bradley Woods and Huntington Beach Field Trip. The highs and lows of plants, trees and mosses, maybe also algae, will be identified. Meet at the Bradley Woods parking lot off Bradley Road, 0.5 miles south of Center Ridge Rd. (Rt. 20) in Westlake in western Cuyahoga County.
- Oct. 20 (Saturday) 10:30 a.m. – Cincinnati Chapter.** Field trip to Brown County, Indiana to see Fall color, gentians and spiranthes.

Oct. 20 (Saturday) 1 p.m. - Caesar Creek SNP. A walk through forest and field as Caesar Creek Gorge prepares for the paleness of winter with the colorful complexion of Fall.

Oct. 21 (Sunday) 12 p.m. - Howard Collier Scenic River Area. Hike for Fall color and to see preparation for winter.

Oct. 23 (Tuesday) 7 p.m. - Little Beaver Creek Chapter. Columbiana County Joint Vocational Center. Favorite Slide Night.

Oct. 27 (Saturday) 8:30 a.m. - Athens Chapter. A field trip through the 300 year old Oak-Beech-Maple forest of Dysart Woods in Belmont County. These woods are a remnant of the pre-European eastern deciduous forest that once dominated the unglaciated portion of Ohio.

Oct. 28 (Sunday) 3 p.m. - Davey Woods SNP. A walk that will focus on the steps being taken by the preserve inhabitants to get ready for winter.

Columbus, Portsmouth and Toledo programs were not available at press time.

CHAPTER CONTACTS

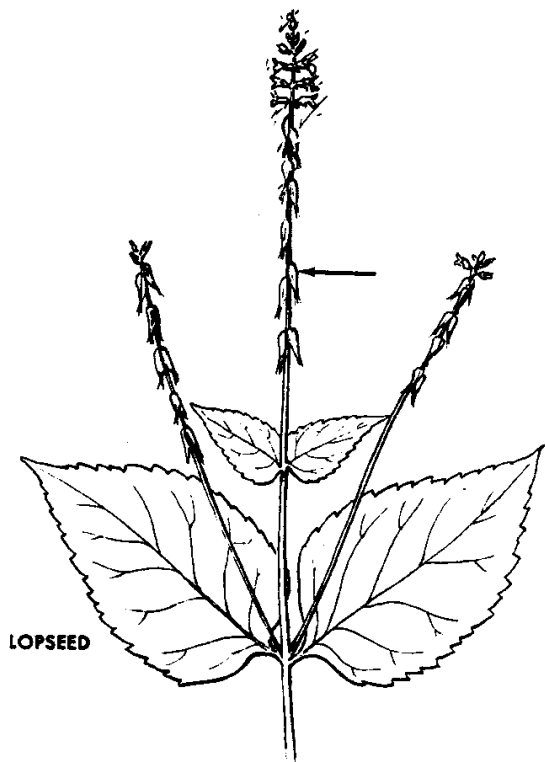
Athens	Jean Andrews, 33 Woodward Ave., Athens 45701 (H) 614/593-7810
Cincinnati	Dr. Vic Soukup, 338 Compton Road, Cincinnati 45215 (H) 513/761-2568
Cleveland	Tom Sampliner, 2561 Kerwick Rd, Univ. Hts. 44118 (H) 216/321-3702 (W) 216/579-1272
Columbus	Dr. Jeanne Willis, P.O. Box 63, Westerville 43081 (H) 614/882-4644 (W) 614/898-1617
Natural Areas & Preserves	Call: 614/265-6453
Dayton	Bob Gilbert, 1869 Willowgreen Drive, Dayton 45432 (H) 513/429-0255
Lisbon	Carol Bretz, P.O. Box 375, New Waterford 44445 (H) 216/457-2385 (W) 216/424-7221
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Toledo	Peter Montion, 6950 Providence St. Whitehouse 43571 (H) 419/877-9261
Wilderness Center	Marvin Smith, 7236 Camp Rd, West Salem 44287 (H) 419/869-7575

A LOOK AT LOPSEED by John W. Thieret

When the winter winds blow and it's twenty below . . . Such weather is hardly the time to go on a botanical stroll through the woods. But when the winter winds are gentle and the temperature is in the 40s or above, a walk in our forests--and identification of their plants by "off-season" characteristics--can be rewarding experiences. Most of our sylvan plants are nearly as easy to identify then as they are when they are in full leaf and flower. Winter twigs, fruits of various kinds, and brown leaves on the forest floor can all be recognized after a little practice.

One of the forest dwellers that is as easy to recognize in the cold months as it is during the growing season is lopseed (*Phryma leptostachya*) (Fig. 1). This is a frequently seen, summer-flowering perennial that can be up to about a meter tall but is usually only about half this size. In late autumn and in winter, look for the long, slender spikes, each with its many "upside-down" fruiting calyxes, that persist on the brown and now-leafless dead plants. You can find lopseed in woods, often with beech, sugar maple, and oaks.

Lopseed occurs throughout Kentucky and, indeed, over much of eastern United States and closely adjacent Canada. Elsewhere, it is found in only one other area: eastern Asia. (Incidentally, do not believe Webster's Third New International Dictionary when it reports that lopseed is "adventive in No. America.")



I have seen lopseed over much of its U.S. range, but only a few times in what might be called abundance. Usually one notes an individual here, and an individual there. The plant, it must be admitted, is not especially showy, even in full flower. Indeed, I think that the word "inconspicuous" is an apt one to describe it. The white, usually pink-tinged flowers 5-8 mm long, open at one time during the day or night, but usually in the morning. The buds point up, but as time for blooming approaches, they gradually

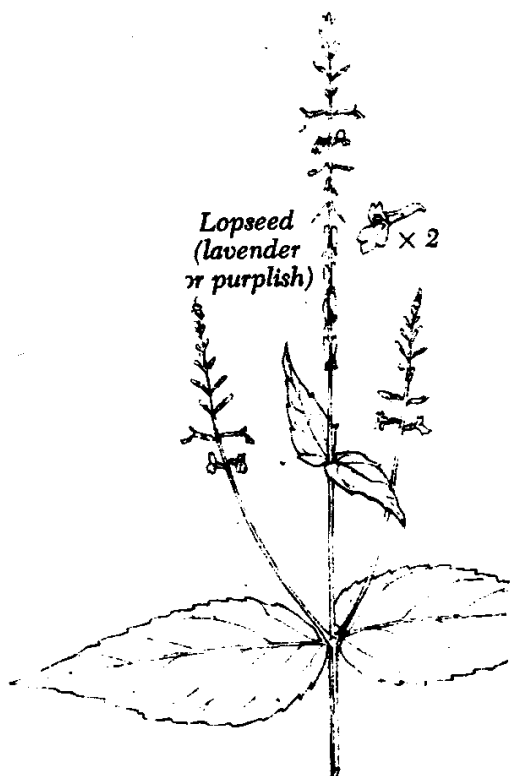
become horizontal. Flowering begins at the base of the long, slender inflorescence and then moves upward, the flowers typically opening in pairs.

Having an interest in pollination, I once spent several hours--both day and night--watching lopseed flowers to see if any visitors came to them. Nothing ever appeared. One observer, though, reported that long-tongued insects, including some kinds of bees, bring about pollination.

Each flower lasts 12 to 36 hours, after which the corolla drops. Then within one or two days the calyx and the growing fruit within it turn sharply downward and remain in this "upside down" position. The seedlike fruits--each containing one seed--remain enclosed in the calyx, which enlarges to accommodate their growth (Figure 2).

Three of the calyx lobes, longer than the other two, are hooked at the tip, which presumably is aid to dispersal by animals; I have found lopseed fruiting calyxes attached to my socks after an autumnal walk in the woods. The fruits, though small, are known to be eaten by certain birds--for example, wild turkeys.

The fruits may be edible for some animals, but an extract from the leaves and roots of lopseed has been found to act as an insecticide. Indeed, one of the names by which the species is known in China is "poisonous fly-plant." But don't throw away your Black Flag or other household or garden bug killers. Lopseed is hardly likely to replace them; the plants are simply too infrequent, and the concentration of the poisonous principle in them is just too low for commercial exploitation.



The name "lopseed" recalls the "upside down" position of the fruiting calyxes. "Lop" is a rather infrequently heard adjective meaning "hanging down" or "pendent." We use it perhaps most often--other than for *Phryma leptostachya*--for lop-eared rabbits, those with the droopy ears.

Long in a family all its own--the Phrymaceae--lopseed has

more recently been placed by some authors in the verbena family, but the evidence for this new placement is not overwhelming. Not only is the family relationship of lopseed uncertain, but other aspects of the species--especially pollination and dispersal--need investigation. There is still much to learn about lopseed--and about most other plants in our own backyards.

John W. Thieret is a Professor of Botany at Northern Kentucky University.

WETLANDS IN THE 1990 FARM BILL

Once deemed little more than damp, useless waste land, wetlands are now valued as one of nature's most important ecosystems. Wetlands: a) provide critical habitat for plants and animals, including more than half of the species on the endangered list, b) protect land from floods and erosion by slowing the velocity of water, c) clean water supplies by trapping sediment and filtering contaminants, and d) serve as vital groundwater recharge areas.

Wetlands are currently disappearing at a rate of 300,000 to 500,000 acres per year - 34 to 57 acres each hour. Of the nation's 215 million acres that existed when Europeans first arrived here, only 90 million acres remain. Ninety percent of California's wetlands have disappeared, as have 90% of Illinois' and 99% of Iowa's. Agricultural conversion is responsible for the bulk of these losses.

The Swampbuster provision of the 1985 Farm Bill promised to halt the destruction of wetlands by denying federal benefits to farmers who produce crops on converted wetlands. However, the bill has huge loopholes. It does not specifically outlaw the conversion of wetlands, and instead prohibits the production of cash crops on drained wetlands. Furthermore, the title allows farmers who withdraw from federal programs to drain their wetlands and then return to the programs in subsequent years. Lax enforcement by federal agencies has seriously weakened Swampbuster provisions.

You can help. Please write your representative and urge strengthening of Swampbuster. We believe the 1990 Farm Bill version of Swampbuster must: a) make initial destruction of wetlands, not subsequent crop production, a violation of law, b) give the Fish and Wildlife Service (FWS) concurrence on Swampbuster decision, c) create an easement program to protect the most valuable wetlands, and d) protect cropped wetlands from destruction, support no exemptions!

Ask your representative to accept no exemptions from Swampbuster. Exempting wetlands that were cropped 6 to 10 years from Swampbuster is unacceptable and, according to the USDA's own estimates, would mean destruction of an additional 8 million acres of wetlands. Urge your representative to sign on as an original cosponsor of Congressman Conte's Swampbuster Improvement Act of 1990. For more information, contact Brett Hulsey at (608) 257-4994.

This article has been reprinted from **Sierra Club News**, July/August, 1990 edition.

OHIO ENDANGERED PLANT LIST: 1990 Version, by Patricia Jones, Division of National Areas and Preserves.

The sixth version of Ohio's official list of endangered and threatened plants was filed as a proposed Ohio administrative rule on July 12. A public hearing is scheduled for August 22 at the Columbus headquarters of the Ohio Department of Natural Resources. The list will be formally adopted at the end of September. This new list represents all information collected between May 1988 and January 1990 on Ohio endangered, threatened, potentially threatened and presumed extirpated vascular plants.

There are major changes within rarity status, but no great shifts in the actual number of species in each category. The following table summarizes the changes proposed for the 1990-91 list:

<u>Status</u>	<u>Total Species 1988-89</u>	<u>Species Added</u>	<u>Species Deleted</u>	<u>Total Species 1990-91</u>
Endangered	178	22	13	187
Threatened	174	16	26	164
Potentially Threatened	154	15	12	157
Presumed Extirpated	110	2	10	102

Of the species inventoried since 1988, 15 shifted to a more endangered status and 36 changed to a less endangered status. Because state status is based on data collected during the last 20 years, a change to a more endangered category is generally due to older data being dropped from the determination process. Changes to a less endangered status reflect records for new populations added to our data system and rediscoveries of plants which were believed extirpated from Ohio.

The following presumed extirpated plants were rediscovered since the adoption of the 1988 list: **Carex mesochorea** (Midland Sedge, by Allison Cusick and Renee Beaudoin; 1988; Preble County), **Cuscuta glomerata** (Glomerate Dodder, by Chuck Thomas, Art Kuhlman, Perry Peskin and Jim McCormac; 1989 Logan County), **Hypericum boreale** (Northern St. John's-wort, by Jim Bissell; 1989; Summit County), **Krigia dandelion** (Potato-dandelion, by David Dister; 1989; Clermont County), **Poa paludigena** (Marsh Spear-grass, by Jim Bissell and Beverly Danielson; 1988, Ashtabula County, and by Jim Bissell; 1989, Geauga County), and **Potamogeton friesii** (Fries' Pondweed, by Jim Bissell and Beverly Danielson; 1988, Portage County). In addition to these species, a Miami University specimen of **Selaginella** collected by John Bryant in 1977 from Highland County was reannotated to the presumed extirpated **S. eclipses** (Midwest Spikemoss). This plant has been recently collected in Greene County by Allison Cusick and a population was relocated in Highland County by John

Baird. Finally, the *Aster acuminatus* (Mountain Aster) reported by Judy Bradt-Barnhart in 1985 from Lake County was accepted as a native Ohio population resulting in the removal of this plant from the category presumed extirpated.

Other changes in the 1990-91 list include 10 taxa which were dropped from our inventory. Eight species were judged secure in Ohio, one specie is considered non-native to the state and one was a trivial form of a more widespread taxon. State status was also determined for four unassigned species. *Cacalia suaveolens* (Sweet Indian-plantain) and *Vernonia missurica* (Missouri Ironweed) appear on the 1988 list. *Androsace occidentalis* (Western Rock Jasmine) and *Eleocharis caribaea* (Caribbean Spikerush) were added to our inventory in 1989.

Sixteen new species have been added to the 1990-91 state plant inventory. In order to provide time to assess their abundance, these taxa will not be assigned a state endangerment status until the 1992-93 list is prepared. Some of these added species such as *Panicum spretum* (Narrow-headed Panic-grass) are new to the state flora, while others have either been overlooked in past floristic surveys or are suspected of declining in abundance throughout the state. For the first time, we are including non-vascular plants on our inventory. Dr. Jerry Snider of the University of Cincinnati recommended the addition of six species of bryophytes. Each of these rare mosses is only known from one or two locations in Ohio.

Copies of the new general distribution plant list will be available in late September. Copies can be requested by contacting the Division of Natural Areas and Preserves, 1889 Fountain Square, Columbus, OH 43224. Copies will also be provided to Ohio Native Plant Society chapters for distribution to interested members.

BOOK REVIEW

Identification of Plants with Fleshy Fruits by Eugene C. Ogden and Richard S. Mitchell

This is a guide to all known wild plants with fleshy fruits and berries in the Northeast United States and eastern Canada. Domesticated plants are not included. Written for the non-botanist, the book provides keys to identifying plants from the fruits or the stems, leaves, and fruit. It is intended for initial identification of plants with fruits and berries. If the plant is potentially dangerous, the reader is referred to specific page number of the **AMA Handbook of Poisonous and Injurious Plants**. For poisonous plants not covered by the AMA handbook, a caution from Hardin and Arena's **Human Poisoning From Native and Cultivated Plants** is cited. Included is a 5 1/4 inch, 360K floppy disk that allows very fast fruit identification. The disk is formatted for an IBM PC, XT-AT compatible computer. 97 pp., 128 illustrations, bibliography. Order from The New York State Museum (ISBN #:1-55554-188-3). \$12.95 plus \$1 for all orders less than \$25, \$2.50 on orders of \$25 or more for shipping. Make checks payable to New York State Museum Publication Sales and send to Publication Sales, The New York State Museum, 3140 CEC, Albany, New York, 12230.

SUGAR MAPLE by Gordon Mitchell

In the northeastern and Great Lakes states, late winter and early spring are an important time of the year for people who own large groves of maple trees. This is when many of those trees are tapped for their sweet maple sap that is later boiled down to make maple sugar and maple syrup.

Sugar Maple (*Acer saccharum*) is found in most of the northeastern United States. It prefers habitats of moist but well-drained and fertile soils. It is usually found in mature woodlands and may be found in pure stands. Sugar Maple is one of the dominant trees of many forest communities. It shares with the American Beech (*Fagus grandifolia*) the honor of being a climax forest species (beech-maple forest).

The Sugar Maple is a shade tolerant, long-lived (up to 250 years) tree that is intermediately fast growing. It grows faster in open areas than in closed areas and grows fastest in the first 35-40 years. Its growth peaks at 125-150 years. It has a shallow, spreading root system and will easily sprout. It is also susceptible to fire damage and the exposed wood is subject to heart rot and other diseases.

This tree may reach a height of 40-100 feet, and a diameter of about 1-4 feet. The stems are short but the crown is broad, round, symmetrical and dense. The branches are stout, upright or ascending to spreading, and short.

The bark is smooth and a light gray color in its youth. A more mature bark is dark flakey brown with rough vertical grooves and narrow, scaley ridges.

The twigs are glossy or shiny, smooth, and slender. Their color can range from red and brown to green or gray (depending on which reference book you use!) Deer and cottontail rabbits browse on the twigs.

The wood is light brown, hard, heavy and strong. It is durable, shock-resistant and close-grained. It takes a good polish and has many uses. One of its main uses is for various types of lumber: birdseye, curly, blister and plain. Other uses are for furniture, flooring, boxes, crates, veneer, cabinets, paneling, and musical instruments.

The buds of the Sugar Maple are brown, long, slender, sharp-pointed, and have 6-10 pairs overlapping bud scales. The lateral or side buds are smaller, solitary, and oppositely arranged on the twigs.

Leaves of Sugar Maple are deciduous, simple and oppositely arranged. They have five palmately pointed lobes with moderately deep notches between the lobes. The leaves are hairless, a full dark green above, and a paler green below. They are partially wrinkled, and turn yellow, orange or red in the fall. The edges of the leaf are firm and do not droop. There are five main veins on each leaf. The leaves are also long, broad and wide, and have small bases. The petioles are long and do not have stipules. The leaves are eaten by deer.

The flowers are borne upon drooping clusters that are about 1-3 inches long with slender, hairy stalks. Each cluster is located below the newly emerging leaves on the sides and the terminal end of the twig. Each flower is yellow-green, and 3/16 inches long, and has a bell-shaped calyx with five lobes. The calyx is also hairy at the apex. The flowers have no petals. There are 4-10 (usually 8) stamens emerging from the edge of a large disk and one pistil with a two-celled, two-lobed ovary. The ovary has two ovules in each cell and a two-forked style. Both sexes may be found on the same tree. Flowering season is from April to June.

The fruit is called a samara or a key. It is a dry, one-seeded flat wing. It is 3/4 to 1-1/2 inches long and found in U-shaped pairs. There is a 60 degree angle in the spread of the U-shape. Fruiting season is June to September. The seeds ripen in late summer but don't germinate until the following spring.

Sugar Maple trees are probably best known for their maple syrup and sugar. Since the sugar content in the sap is minute it takes about 30-50 gallons of sap to make one gallon of syrup. The best time to collect the sap in Ohio is in late February or early March. The sap runs best when you have nights with temperatures below freezing and days with temperatures above freezing. Sap can be safely collected until late March or early April. When the buds break the sap becomes bitter. Hard maples like the Sugar Maple and Black Maple (*Acer nigrum*) are better for tapping than soft maples like Silver Maple (*Acer saccharinum*) or Red Maple (*Acer rubrum*). The soft maples have less sugar in their sap, have more sugar sand, and their buds break earlier in the season.

The American Indians were the first people to make maple sugar. They used it as food and for currency. The early French and British explorers, traders and missionaries were probably the first Europeans to observe and record the Indians making maple sugar. Moravian missionaries like David Zeisberger and John Heckewelder, and Indian captives like Colonel James Smith and Jonathan Alder observed and recorded this activity in Ohio.

Gordon Mitchell is a member of the Columbus Chapter.

References:

The Complete Trees of North America by Elias; **Trees of North America** by Brockman; **A Field Guide To Trees and Shrubs** by Petrides; **Ohio Trees** by Dean, Chadwick and Cowen; **How to Know the Trees** by Miller and Jaques; **Eastern Trees** by Petrides; **Making Maple Syrup** by Cowen; and **The Audubon Society Field Guide to North American Trees (Eastern Region)** by Little.

This article is reprinted from the Central Ohio Chapter, **The Catchfly**, February 1990 issue.

SOMETHING ABOUT "NATIVE" TO NOTE by Dr. Ed Clebsch

"Native" is but one of a host of plant distribution patterns, reflected in terms in the language, but a very important one to those of us interested in the horticultural and aesthetic use of plants. It refers to plants that survived and reproduced in a given place as part of the "original" flora, according to one text's definition. "Indigenous" means approximately the same thing, but both terms' definitions have soft boundaries. After all, what time fixes the "original" flora of North America? Was it when *Homo sapiens* arrived on the continent, or when he began to manipulate plants? And which arrival -- the one from the west or the one from the east? Plants do migrate on their own, dispersing in response to a broad range of agents -- wind, insects, man, other mammals, water, birds, and so on. Once established locally, their populations may expand and contract in response to man's activities or in response to natural environmental changes like glaciation and deglaciation, changes in stream patterns and general drainage patterns, and changes in the trends of climatic variables like moisture and temperature.

Field botanists are forever on the lookout for populations of plants widely separated from their nearest neighbors of like kind -- that is, "disjunct" populations. For example, the two known Tennessee populations of showy lady's slipper (*Cypripedium reginae*) are separated by more than 50 miles -- are disjunct from one another -- and are separated from the nearest known other population of the species by even more miles.



Occasionally plants are discovered that are restricted in their native range to a small area. They are "endemic". An extreme case is that of *Franklinia altamaha*, discovered by William Bartram at one site on the Altamaha River in Georgia. Bartram propagated the plant from seed in his Philadelphia gardens and named the species after his friend Benjamin Franklin. It has not been seen in the wild in over 200 years. The many specimens currently enjoyed are descendents of the plants Bartram found and are "exotic" or "foreign" in

their present locations.

The word for the condition opposite to endemic is "pandemic" meaning common or widespread. For instance, coconut palm is native to all of the tropical coastal areas of the world, and is therefore a tropical pandemic species. Still, it is "continuous" in its natural distribution only on ocean strands, and is disjunct from one side of South America to the other.

Man has carried plants pretty much all over the globe, and where his exotics become established and reproduce on their own, they are "naturalized." Our flora of eastern North America is replete with such immigrants. Some, like ox-eye daisy and Queen Anne's lace, are so well-adapted they are regarded as weedy or "ruderal." Properly used, nevertheless, both plants are excellent garden subjects. The term ruderal, which now stands for a weedy plant, has itself evolved. It was taken from a word describing the place where the plants grew -- a habitat term. That word, in turn, derived from the material which made the habitat -- rubbish.

One of the passions of botanists is to understand distribution patterns of species, native or exotic. The "what" of the patterns always stimulates the "when," "how," and "why" questions that underlie the "what." Even recording the where and when of the introductions and establishment of exotics (whether deliberate or accidental) is important. Their extinction or rates and patterns of expansion are interesting and revealing as well. Good case studies of such events are rare.

What effects do we as propagators, sellers, or buyers of natives have on distribution patterns? We certainly expand plants' ranges! We certainly cause (or provide opportunities for) isolated or widely separated genotypes to hybridize!

Are such activities wise, unwise, or inconsequential? I think we don't know enough to judge. Will history condemn us? We live in a time of social conscience about extinctions. Will there be a time of social conscience about our now seemingly innocent horticultural practices?

Dr. Ed Clebsch is professor of Botany and Ecology at the University of Tennessee, Knoxville. A long-time conservationist, his research interests center on plant distribution patterns and alterations to these patterns. Along with his wife Meredith, Ed owns and operates Native Gardens, a nursery devoted to propagated native perennials.

USED MOTOR OIL . . . THE SILENT SPILL (Solid Waste Committee)

Attention Do-It-Yourself Oil Changers! Do-it-yourselfers, or people who change their automotive oil at home, generate millions of gallons of used oil annually. Ohioans alone are estimated to generate 19 million gallons. With 90 percent of this oil being disposed of improperly, the environment is at risk. Now you can recycle your motor oil. A monthly motor oil recycling program opened in June for everyone in the Cleveland area. In May, a program was established through a grant by the Ohio Department of Development in cooperation with The Environmental Health Watch and Research Oil Company. The nine currently in operation are listed below. The program is tentatively scheduled for the second Saturday of each month for the rest of the year between 10:00 a.m. and 2:00 p.m. Additional locations are planned in the near future. This is very good news because many service stations no longer accept used oil as they did a few years ago.

If you change your own oil, consider these facts: Last year more than 300 million gallons of oil were illegally dumped in our water supply by do-it-yourselfers. This is 30 times more than the Valdez Alaskan oil spill! And, it happens year after year. A single quart of motor oil can pollute 250,000 gallons of drinking water. It takes 42 gallons of crude oil to produce 2-1/2 quarts of lubricating oil, but it takes just one gallon of used oil to be refined into the same 2-1/2 quarts. Just one pint of used oil will create an oil slick an acre in diameter. Tossing oil into the trash is essentially the same as pouring it out, as it will eventually seep into the ground water. If we recycle all our old motor oil, it would equal half of the yearly output of the Alaskan pipeline! Need we say more?

The procedure is extremely simple. The oil can be brought in any suitable container, a plastic milk jug, an empty anti-freeze bottle, or what have you. Just drive in and give the volunteer your old motor oil. The volunteer will drain the oil out of your container and either return it to you or recycle the container. What could be easier? The only restrictions are that the used oil must be free of contaminants such as gasoline, antifreeze, or brake fluid, and that a maximum of five gallons per individual will be accepted per month.

Alternatively, for those who can not participate in the program, we have found that many service stations will accept oil if you pay them a \$1/gallon or so, small price to pay considering the environmental advantage of doing so. Several years ago service stations received 30 or 40 cents per gallon for used oil, but now, with additional regulations and testing procedures, it costs them 30 or 40 cents per gallon to have it hauled away and disposed of properly. Paying them \$1.00 makes it financially worth their effort to take it from the public.

For more information on this program and future sponsorship opportunities, please call 961-9262.

This article has been reprinted from **Sierra Club News**, July/August, 1990 edition.

IS THE DOGWOOD NEXT? by J. Arthur Herrick, Professor Emeritus, Botany,
Kent State University

As a boy (born 1908) I earned spending money by gathering chestnuts in northeastern Ohio. At that time the American chestnut was one of the major forest trees of eastern North America. We imported the chestnut blight fungus from the Orient early in this century. Most of our chestnuts died during the 1930s. Now, the native chestnut is little more than a memory to senior citizens.

In the 1920s the American elm was the most beloved of shade trees in our eastern cities. In the late 20s we imported a fungus from France, which is well on its way to making the stately elm another pleasant memory. We call this the Dutch elm disease because it was first significantly studied in Holland.

When I joined the faculty at Kent State University in 1938, we had many lovely white-barked European birch trees on campus and in private lawns. About then we imported the European bronze birch borer. Today we have no such trees in Kent. Also common then, and still seen today, is another white-barked birch, this is our native "gray birch." It is still planted as an ornamental, commonly in clumps. But, due to the bronze birch borer this tree usually lives no more than 10 or 15 years, even with spraying.

Also common until two or three decades ago was the tall, slender, columnar Lombardy poplar. Now, once in a while, we see a dead or dying Lombardy poplar. Why? We imported another parasitic fungus. The disease is known as the European poplar canker.

Now it appears that we may be about to lose our lovely flowering dogwoods. Dogwood anthracnose is a fungus disease of unknown origin. Our native flowering dogwood appears to have no resistance. Some oriental species are more or less resistant. This suggests that the disease is of oriental origin. The fungus (*Discula* sp.) kills leaves, twigs, and due to canker formation, larger branches and often the whole tree dies. The disease was first noticed in the late 70s in New York and New Jersey. Today the disease is known to occur in many of our eastern and southern states. It is in Pennsylvania and Kentucky, but as far as I can learn, it is still unreported in Ohio. It is, however, getting very close. In June, while visiting friends in Pittsburgh, I helped them remove several large, dead or almost dead, anthracnose-damaged flowering dogwoods. That is too close!

If you are looking a year ahead, plant seeds of annual plants.
If you are looking ten years ahead, plant a spirea bush.
If you are looking 100 years ahead, plant a white oak tree.
If you are looking ahead forever, educate people.

The following article is reprinted because environmental ethics is becoming a very hot topic and the Journal editor thought it should be called to your attention. The list of scientific signatories at the end includes many persons of note in the scientific community.

In his book **"The Rights of Nature,"** Roderick Nash states that the extension of ethical and legal rights to animals, plants and the rest of the natural world is now being written. For a growing number of people, throughout the world but particularly in the United States, the belief is taking root, he writes, "that nature, or parts of it, has intrinsic worth which humans ought to respect."

"From this perspective." Mr. Nash continues, "one can regard environmental ethics as marking out the farthest limits of American liberalism. The emergence of this idea that the human-nature relationship should be treated as a moral issue conditioned or restrained by ethics is one of the most extraordinary developments in recent intellectual history."

* * * * *

PRESERVING AND CHERISHING THE EARTH An appeal for joint commitment in science and religion.

In January during a meeting in Moscow of the Global Forum of Spiritual and Parliamentary Leaders, Cornell astronomer Carl Sagan drafted the following appeal from thirty-two world renowned scientists to spiritual leaders for a joint commitment on the environment. Since then, 270 spiritual leaders from eighty-three countries have supported the appeal.

The Earth is the birthplace of our species and, so far as we know, our only home. When our numbers were small and our technology feeble, we were powerless to influence the environment of our world. But today, suddenly, almost without anyone noticing, our numbers have become immense and our technology has achieved vast, even awesome, powers. Intentionally or inadvertently, we are now able to make devastating changes in the global environment — an environment to which we and all the other beings with which we share the Earth are meticulously and exquisitely adapted.

We are now threatened by self-inflicted, swiftly moving environmental alterations about whose long-term biological and ecological consequences we are still painfully ignorant — depletion of the protective ozone layer; a global warming unprecedented in the last 150 millennia; the obliteration of an acre of forest every second; the rapid-fire extinction of species; and the prospect of a global nuclear war which would put at risk most of the population of the Earth. There may well be other such dangers of which, in our ignorance, we are still unaware. Individually and cumulatively they represent a trap being set for the human species, a trap we are setting for ourselves. However principled and lofty (or naive and shortsighted) the justifications may have been for the activities that brought forth these dangers, separately and together

they now imperil our species and many others. We are close to committing — many would argue we are already committing — what in religious language is sometimes called Crimes against Creation.

By their very nature these assaults on the environment were not caused by any one political group or any one generation. Intrinsicly, they are transnational, transgenerational, and transideological. So are all conceivable solutions. To escape these traps requires a perspective that embraces the peoples of the planet and all the generations yet to come.

Problems of such magnitude, and solutions demanding so broad a perspective must be recognized from the outset as having a religious as well as a scientific dimension. Mindful of our common responsibility, we scientists — many of us long engaged in combatting the environmental crisis — urgently appeal to the world religious community to commit, in word and deed, and as boldly as is required, to preserve the environment of the Earth.

Some of the short-term mitigations of these dangers — such as greater energy efficiency, rapid banning of chlorofluorocarbons or modest reductions in the nuclear arsenals — are comparatively easy and at some level are already underway. But other, more far-reaching, more long-term, more effective approaches will encounter widespread inertia, denial, and resistance. In this category are conversion from fossil fuels to a nonpolluting energy economy, a continuing swift reversal of the nuclear arms race, and a voluntary halt to world population growth — without which many of the other approaches to preserve the environment will be nullified.

As on issues of peace, human rights and social justice, religious institutions can here too be a strong force encouraging national and international initiatives in both the private and public sectors, and in the diverse worlds of commerce, education, culture and mass communication.

The environmental crisis requires radical changes not only in public policy, but also in individual behavior. The historical record makes clear that religious teaching, example, and leadership are powerfully able to influence personal conduct and commitment.

As scientists, many of us have had profound experiences of awe and reverence before the universe. We understand that what is regarded as sacred is more likely to be treated with care and respect. Our planetary home should be so regarded. Efforts to safeguard and cherish the environment need to be infused with a vision of the sacred. At the same time, a much wider and deeper understanding of science and technology is needed. If we do not understand the problem, it is unlikely we will be able to fix it. Thus, there is a vital role for both religion and science.

We know that the well-being of our planetary environment is already a source of profound concern in your councils and congregations. We hope this appeal will encourage a spirit of common cause and joint action to help preserve the Earth.

The Amicus Journal, Summer 1990. A publication of the Natural Resource Defense Council, New York, N.Y.

* * * * *

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The Rev. Jesse Jackson, president,
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Stuart E. Brown, general secretary,
Canadian Council of Churches

Medicinal and Other Uses of North American Plants: A Historical Survey With Special Reference to the Eastern Indian Tribes by Charlotte Erichsen-Brown, Dover, 1989, xx+ 512 pages, \$12.95

This is a softcover reissue of a book published in 1979 in Canada (as Use of Plants for the Past 500 Years) that has been difficult to find in the United States. Charlotte Erichsen-Brown has collected an immense variety of citations of the medicinal and other uses of the plants of eastern Canada and the northeastern United States, and presents them here in a form that is both convenient and informative.

The bulk of the book consists of brief botanical descriptions of the plants, followed by extensive selections from the literature. The descriptions also mention closely related species; where early accounts do not make clear which of several species is intended, their descriptions are usually grouped together. These descriptions would be useful to confirm an identification, but are not intended to supplant conventional field guides.

It is, however, the generous selection of reports on the uses of the plants that constitutes the value of this book. These reports range from those of the earliest European explorers, such as Lescarbot's "Nova Francia" of 1606 and the 73 volumes of Jesuit "Relations," which begin with 1610, to very recent studies in ethnobotany, anthropology, and medicine. (Erichsen-Brown notes in the bibliography that the "Relations" were edited in France and intended as reports to French and European Catholics who subsidized the Jesuit missions, so that they emphasize religion and language rather than the details of Huron life.)

The discussion of a single plant may run to many pages. The entry for the shagbark hickory, *Carya ovata*, occupies seven pages and includes thirty-nine citations, the earliest from 1590. The white spruce, *Picea glauca*, rates fifty-three citations, the latest from 1979.

All the well-known writers on natural history and on American Indian life (a special interest of the author) are here: Cutler and Bartram, Kalm and Sagard, and most of all Huron H. Smith. Erichsen-Brown writes that Smith's work is especially valuable because he obtained positive identifications of the species from Indian informants, and every pertinent reference from his work is quoted in full.

Many more obscure sources are also cited, such as correspondence in Canadian archives, medical-school notes from the 1820s, and an Icelandic medical manuscript dated 1475. Archaeological research is also cited where it is appropriate, and herbalists such as Culpeper and Gerarde are quoted on plants of which similar varieties were known in America and Europe. One frequently cited work that may be of special interest to Ohio readers is David Zeisberger's 1779 "History of the North American Indians."

The eccentric but incisive introduction, with its comments about useful medicines known centuries ago to American Indians but forgotten after European conquests, its speculations about early European contacts with America, and its theories about the origins of certain plants, are also of particular interest.

Erichsen-Brown warns in the introduction and in a separate note that the details of preparing and using medicinal plants are almost entirely lost, and that this book is not intended as a medical guide. Rather, it is an exceptionally complete and revealing compilation, impressive in its breadth and fascinating in its detail.

GUYANDOTTE BEAUTY, SYNANDRA by Robert Lloyd and Philip Cantino

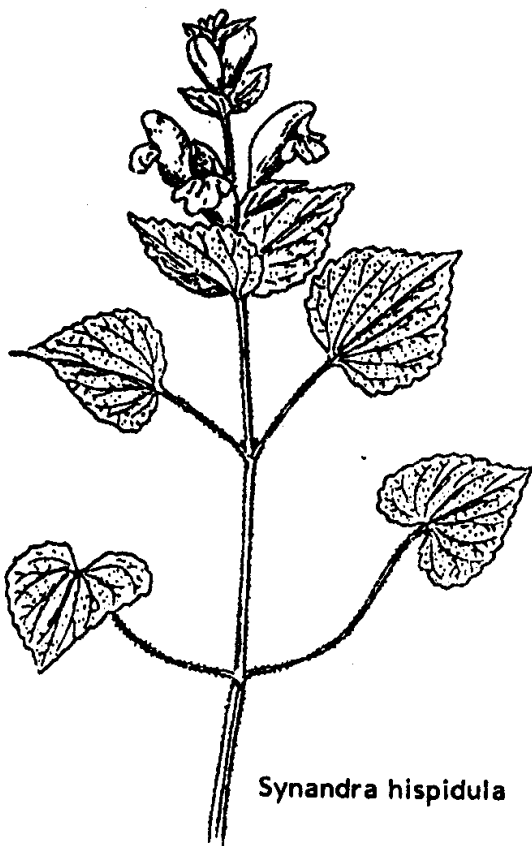
Synandra is a showy-flowered woodland member of the Mint family that is something of a specialty of southeastern Ohio. It is rare globally but fairly common in our area.

Flowers of synandra are produced in late May and June; they are solitary in the axils of the leaves and form a terminal spike. The corolla grows to 1.5 inches long, making it one of the largest found in North American mints. Petals are pale yellowish-white, greenish-yellow or greenish-white, with a lower lip with purplish lines, or "nectar guides."

Synandra is conspicuous when in flower and easy to spot. When not flowering it may be confused with other species. It has been described as looking much like an overgrown *Lamium purpureum*, or dead-nettle. In addition, the basal rosette looks very much like violet leaves.

Synandra is listed as a potentially threatened species in Ohio and has been proposed for consideration for federal listing. It is restricted to a narrow band of states running from a single location in Alabama north through Tennessee, western North Carolina and Virginia, Kentucky, West Virginia to Ohio and southern Illinois. It is most common in Kentucky and the southern half of Indiana.

In Ohio, synandra grows in widely scattered locations throughout the southern part of the state — particularly Adams, Athens, Franklin, Hamilton, Lawrence, Morgan and Perry counties. Many of these counties



Synandra hispidula

have one or only a few populations. All of these plants were found on forested slopes, floodplains or stream terraces in rich, mesic, shaded habitats. Populations in Lawrence County are particularly robust. Near Burr Oak, there is a large healthy population which has been the subject of several research projects by Ohio University graduate students and faculty and is receiving annual monitoring. Some plants can be seen next to the Wildcat Hollow Hiking Trail less than a mile from the parking area.

The species is particularly vulnerable to drought and other disturbances which lead to reduced soil moisture. During dry summers, there is a high mortality of plants. This is due, in part, to its tiny root system with roots no more than two inches long. *Synandra* requires continuously shaded mesic woods with moist soil; any disturbance of the closed canopy, such as logging, leads to rapid extirpation of the population.

The name "*synandra*" comes from the Greek *syn* (meaning "together") and *andrus* (meaning "male"), referring to its cohering locules. The name "*Guyandotte beauty*" was given to the species by Earl Core, a former botanist at West Virginia University and a former mayor of Morgantown. The species was first noted somewhere in the lower Ohio Valley by the French botanist Andre Michaux, in 1793. This area was once inhabited by the Wyandotte Indians, a group to which the French variant "*Guyandotte*" was applied.

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CLAMMY GROUND CHERRY, *PHYSALIS HETEROPHYLLA* by Sheldon Cohen

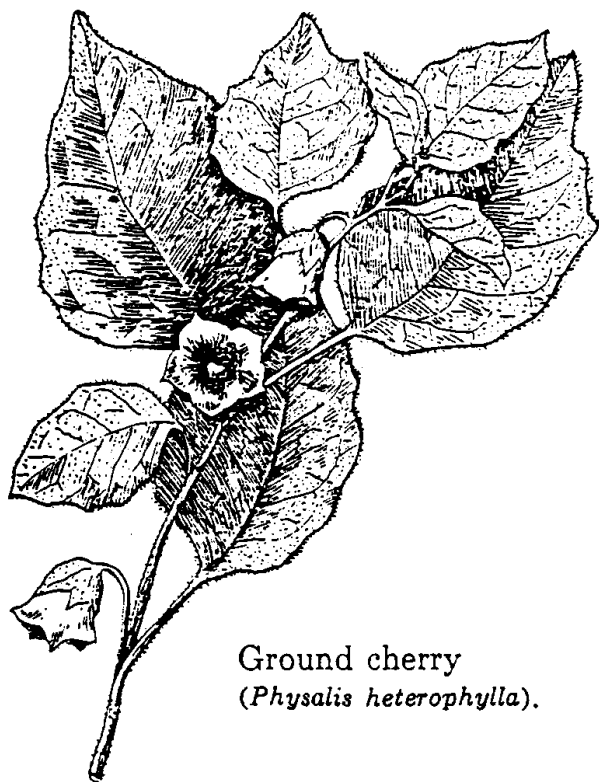
Our highlighted species belongs to the extremely large and varied family *Solanaceae*, more often called nightshade. This is easily one of the major horticultural groupings, containing such important plants as potato, tomato, tobacco, egg plant, garden pepper and petunia. Many of the species contain poisonous alkaloids and are extremely deadly. A few are just common weeds. *Physalis heterophylla*, clammy ground cherry, falls into this latter category, but it too can be a useful food source. The species is found growing in rich well-drained soils of woodlands, fence rows and fields. The ground cherry is particularly bias to disturbed areas. Its natural range is from Florida to Texas, north to North Dakota and Quebec, and east to southwest Maine.

It is a short-lived perennial, growing from a deep buried horizontal rhizome. The sticky-hairy stem is usually erect at first, but frequently branches farther up to form a dense bush. The plant can reach a height of three feet, but later in the season it often has a reclining or sprawling growth form. The two to four inch long leaves are alternate, oval with round-toothed edges, hairy and containing prominent veins. The leaves at the base usually are more rounded, but in this species the leaves can be quite varied in shape. *Physalis heterophylla* produces from mid-May through September one inch diameter bell-like flowers. The greenish-yellow blooms with brown or purple centers are born singly on short stems growing from the leaf axils. They are fluted or pleated with five shallow lobes and droop downward. The ripe fruit is round, berry-like, yellow,

about the size of a small cherry and enclosed in an inflated papery husk. This fruit holder protects the fruit after it has dropped to the ground. Unripe (green fruit) will sometimes fall from the plant and finish its ripening on the ground. The ripe fruit, although it contains many seeds, is edible, but there are reports that the green fruit is mildly toxic.

The genus name, **Physalis** comes from the Greek and means plant with a bladdery husk. The species nomenclature also is from the same language. The first part, **heteros**, translates as different and the second part, **phyllum**, refers to the leaf. The botanist chose this name because the margins of the leaves vary a great deal from one plant to the next. This wildflower has a number of common names; for example, clammy ground cherry, husk-tomato, bladder cherry, or lanternweed; all of which are self explanatory.

The ground cherry was eaten by the Indians, both raw and cooked into a sauce. The pioneers learned about this interesting plant and added recipes for pies and preserves. Although **Physalis** species have been in cultivation for over one hundred and fifty years no serious attempts have ever been made to improve it. The berries can be picked before they are ripe and left in the husk until they turn a rich yellow. The raw fruit is an excellent source for vitamins A and C and also sodium, potassium, phosphorus, calcium, iron, thiamine, riboflavin and niacin. A large amount of the vitamin C is lost in canning, but the other nutrients seem unaffected. The flavor of the ground cherry is pleasant and sweet. Besides being eaten raw and made into pies and sauces, the berries make excellent preserves and jams. A preserve is simply prepared by just boiling the ground cherries in a heavy sugar syrup. Commercial pectin must be added if one wishes to make jam. A very tasty relish is reported using the crushed berries mixed with raw onions, spices, chili peppers, sugar and vinegar. The fruit also serve as a favorite food for pheasants, quail, turkey, opossums and wood mice. Ground cherries were also used by both the Indians and pioneers for medical purposes. A tea prepared from simmering the root was drunk for stomach troubles and in a very concentrated form used to treat and heal open wounds.



Ground cherry
(*Physalis heterophylla*).

For those who wish to grow this species, research on seeds of **Physalis** have shown that it doesn't germinate very well at a constant temperature. Excellent germination is found using alternating temperatures. Planting in spring or fall, where the day and night temperatures vary greatly, gives good success. The plant grows rapidly and can become a weed. Since the species is very common it might be better to just let this one stay a wildflower.

Reprinted from **Kansas Wildflower Society Newsletter**, Summer, 1990.

EASTERN WHITE PINE (*Pinus strobus* L.) by Jean Andrews & Robert Lloyd

White pine is a tall tree with thick furrowed bark and long, slender needles that are in bundles of five. Its cones open at maturity and rarely grow longer than eight inches. These magnificent evergreen trees which can reach over 200 feet are perhaps the most famous pine in the history of the United States. They originally occurred in extensive, nearly pure stands throughout the eastern U.S. from New England to Minnesota, and south into the upper elevations of the Appalachians to Georgia. It has been said that in virgin stands squirrels could run exclusively through white pines and never have to touch the ground.

Before the American Revolution, the British used the straight trunks of the white pine for masts for sailing ships of the Royal Navy. Huge quantities were exported to Europe. It is estimated that what is left in New England represents only 2% of the original stands. Demand for white pine contributed to the westward colonization into Wisconsin. In spite of human exploitation and blister rust, white pine has reseeded and produced second-growth stands throughout its natural range.

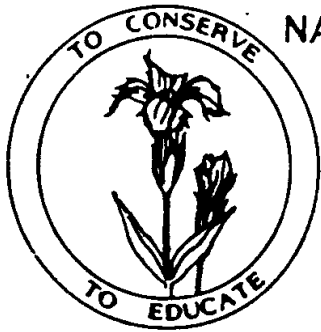
The wood of white pine has been used for masts, window sashes, interior finish, boxes, crates and matches. The inner bark has been used medicinally in cough remedies and is considered to be effective as an expectorant and for reducing swelling. Native Americans soaked the bark in water until it became soft and then applied it to all sorts of wounds. They also boiled the inner bark and drank the liquid for dysentery. A decoction of the buds was used as a laxative and the tar was used to treat burns and itching.



EASTERN WHITE PINE (*Pinus strobus* L.)

Ethnobotanist Huron Smith described the many uses of white pine for the Ojibwe tribe when he wrote in 1932: "...The dried leaves are powdered and used as a reviver or inhalant...White pine is a very valuable remedy with all Ojibwe...The Flambeau Ojibwe used the pitch from the boiled cones, along with resin that flows from boxed trees, for caulking and waterproofing purposes...In the spring the Ojibwe use the young staminate catkins of the pine to cook for food. It is stewed with meat...(I was) assured it was sweet and had no pitchy flavor."

Accordingly to Guy Denny, white pine is native throughout much of the northeastern quarter of Ohio and south along the Ohio River into Washington County. One of the most outstanding natural stands of white pine in Ohio occurs in the Clear Fork Gorge Nature Preserve within Mohican State Forest in Ashland County.



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