NATIVE PLANT SOCIETY OF NORTHEASTERN OHIO

2651 Kerwick Road, Cleveland Hts., Ohio 44118

Founding Chapter Of

THE OHIO NATIVE PLANT SOCIETY

6 Louise Drive
Chagrin falls, Ohio 44022
(216) 338-6622

On the Fringe

THE JOURNAL OF THE OHIO NATIVE PLANT SOCIETY

Volume 9 **January/February** *1991* **No. 1**

INSIDE "ON THE FRINGE" THIS MONTH ARE DETAILS ON:

1991 DUES ARE DUE!!

Send 1991 Dues to: Native Plant Society of N.E. Ohio
17670 Farmington Road
West Farmington, Ohio 44491
John Augustine, Treasurer

NPS of Cleveland Business to: Tom Sampliner, 2651 Kerwick Road, Cleveland Heights, Ohio 44118. Telephone: 216/321-3702.

Ohio Native Plant Society Business to: 6 Louise Drive, Chagrin Falls, Ohio 44022. Telephone: 216/338-6622.

ANNUAL OHIO NATIVE PLANT SOCIETY WEEKEND

MAY 10-12, 1991

HIGHLANDS CAMP, WINDSOR, ASHTABULA COUNTY

$50.00 includes two nights lodging at Highlands Camp, three meals Saturday and two meals Sunday, registration and all other costs.

$35.00 includes three meals Saturday and two meals Sunday, registration and all costs except lodging. This is for those who wish to use the Chardon Motel, the Pine Lakes Campground (for tents and trailers), or Cleveland area homes.

Attendance limited to 95 so spaces will be limited. Each chapter will have a reserved quota based on their chapter size as it relates to the total state membership. It is essential that you get your reservation in as soon as possible in order to ensure your place. In addition, please indicate your preference for lodging so that we may inform the camp, motel, or campground.

RESERVATIONS MUST BE RECEIVED by APRIL 1, 1991.

Check payable to: Native Plant Society of Northeast Ohio
2651 Kerwick Road
Cleveland Heights, Ohio 44118
Attention: Tom Sampliner

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Highlands Camp is a 360 acre preserve in botanically rich Ashtabula County. It is located about three miles south of Windsor, Ohio at the corner of SR 534 and Sweet Road. This will be the starting point of all field trips and the site for all meals and lectures. The camp is run by the Presbyterian Church. The meals are termed "home-cooking" by the resident manager's wife, who runs the kitchen and includes home-baked breads and desserts. Any special dietary needs and requests can be satisfied. Please notify of diet requests on your reservation.

Red Maple Lodge consists of 7 four-bed rooms and 1 two-bed room. There are two bathrooms consisting of 2 showers, 2 toilets and 2 sinks, each. In other words, depending on registrants, four women or four men could share a bedroom and the bathrooms could be divided into men's and women's. There is a kitchen area for snacks and a large social area with a fireplace. All have lights and heat.

White Oak Lodge consists of 6 four-bed rooms. There are two bathrooms with 1 shower in each, and 2 toilets and sinks in each. There is a kitchen area and social area. Heat is included. Hickory Lodge consists of 1 two-bed room, 1 four-bed room, and 1 six-bed room. There is one bathroom with 1 toilet, sink and shower. It includes kitchen, social area and heat.

Hickory Lodge consists of 1 two-bed room, 1 four-bed room, and 1 six-bed room. There is one bathroom with 1 toilet, sink and shower. It includes kitchen, social area and heat.

Bedding, pillows, towels, etc. must be supplied by the attendee.

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The Chardon Motel is in Chardon, Ohio approximately 15 miles from the Highlands Camp. It is clean and comfortable. The rate will be $33.00 per night for two people, or $16.50 per person. Single room rates are $29.00 per person. There are 10 rooms with one double bed and 8 rooms with two beds. No other motel is within such a close range nor are prices so reasonable. Thus, motel space is at a premium.

Pine Lakes Campground is located in Orwell, Ohio approximately 7 miles from Windsor. Daily rate are $9.00 without electricity and $11.50 including electricity. Water hook-ups are standard.

One staff cabin at Highlands is available for four or five people. It does not have a bathroom and the outdoor lavatories are a considerable walk on rocky trails. This could be used if not enough room is available in the other cabins. In addition, there are what is termed "fresh air" cabins: no light, no heat, no amenities whatsoever. Just camp cots with thin quasi-mattresses. The hike to the outdoor lav is farther and more difficult than from the staff cabin. These are available for our use by any hardy soul and would be charged at the $35.00 rate.

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On Friday, May 10, registration will begin at 6 PM. At 8 PM there will be a slide show on northeast Ohio flora, fungi, birds and reptiles. These slides will be the work of noted northeast Ohio photographers from the Cleveland Museum of Natural History: Dan Flocke, Jack Selby, Gary Meszaros and Bruce Mack. A social hour and snacks will be included in the evening.

Saturday morning's scheduled is as follows:

6:15 AM Sunrise bird walk
7:30 AM Breakfast
8:30 AM to 12:30 PM Morning Field Trips
12:30 PM Lunch
1:30 PM to 5:30 PM Afternoon Field Trips
6:00 PM Dinner
8:00 PM Slide Program: "Rare Plants and Habitats of Ashtabula County" presented by Jim Bissell, Curator of Botany and Natural Areas at the Cleveland Museum of Natural History.

The field trips on this day will each be limited to 15 persons. You will have a chance to choose two field trips for the day; one in the morning and one in the afternoon. Registration for the field trips will be at the Camp on Friday evening.

Sunday's schedule is as follows:

6:15 AM Sunrise bird walk
7:30 AM Breakfast, pick up box lunches and check out of rooms.
9:00 AM Field trip to Kingsville Sand Barrens for all. The trip will last until at least noon, or longer for those who wish to stay.

In addition, The Holden Arboretum Native Plant Gardens will be open during all three days for those who wish to see them. The Holden Arboretum is located just east of Chardon, approximately 30 minutes drive from Highlands. It is very near Interstate 90 for those who want to return home that way. I-90 connects with I-71 and I-77.

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Ashtabula County is Ohio's largest and most northeastern county. The county occurs within the lake plain and glaciated Allegheny plateau. The weather is influenced considerably by the proximity to Lake Erie, especially in winter when much of the county lies within the primary snow belt. The Grand River and its tributaries drain much of the county. Within the Grand River lowlands and along the post-glacial beach ridges adjacent to Lake Erie occur some of northeastern Ohio's most significant habitats including hemlock swamps and ancient dunes. On our field trips we will expect to see: Painted Trillium (Trillium undulatum); Spreading Globe-flower (Trollus laxus); Robin-run-away (Dalibarda repens); Striped Maple (Acer pennsylvanicum); Hobblebush (Viburnum alnifolium); Velvet-leaf Blueberry (Vaccinium myrtiloides); Wild Lupine (Lupinus perennis); Pinxter-flower and Northern Rose Azalea (Rhododendron nudiflorum varieties nudiflorum and roseum); and perhaps Massasauga (Sistrurus catenatus). Moreover, uncommon to very rare birds will be seen.

SATURDAY TRIPS (Choose one for morning and one for afternoon; limited to 15 per trip)

1. **Grand River Terraces:** Hemlock swamp with spectacular diversity of wildflowers, ferns and clubmosses; the only location with trails; parts could be wet but terrain is "easy."

2. **Lake Cardinal:** Black water pools in the Grand River lowlands; going through here could be a little messy and footing can be difficult and wet.

3. **Morgan Swamp:** One of the largest inland wetlands in Ohio; once supported the largest hemlock (Tsuga) swamp in Ohio; the only trip where painted trillium will be seen; soggy to wet; terrain fairly level.

4. **Pallister State Nature Preserve:** Acidic forest with occasional pools on the Grand River lowlands; dry to soggy; somewhat difficult to walk.

5. **Pymatuming Creek:** Glacial kame, fen seep; the only site where spreading globe-flower will be seen; dry to soggy; moderately difficult.

6. **Rattlesnake Acres:** Diverse, poory-drained wetland; like Morgan Swamp but with more swamp white oak; soggy to wet; can be difficult walking.

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SUNDAY TRIP: (All attendees can participate, NO LIMIT).

Kingsville Sand Barrens: Only protected ancient dune and beach ridge association in northeastern Ohio; wild lupine, striped maple and clintonia borealis will be seen here; dry to soggy; easy terrain to walk.

Optional SUNDAY TRIP:

After the Kingsville Sand Barrens trip, or instead of, you may wish to visit The Holden Arboretum and the Wildflower Conservation Gardens there.

Field Trip leaders will include professionals from the Cleveland Museum of Natrual History, The Ohio Nature Conservancy, The Holden Arboretum, The Division of Natural Areas and Preserves, and local universities and colleges.

If there are any further questions concerning the Annual Field Trip Weekend please contact: Tom Sampliner — Telephone: 216/321-3702.

REMEMBER — SPACE IS LIMITED!! GET YOUR RESERVATIONS IN EARLY!!

MARCH PROGRAMS

For your information: There will be no program in January or February.

Saturday, March 2 - 9 AM, Herman Losely Nursery. Mark Krogel, plant propagationist, will demonstrate the technique of micropropagation and tissue culturing of woody plants. This technique is also practiced by orchid growers and is becoming more available for home gardeners. Preliminary work has also begun with micropropagation of wildflowers. Be the first gardener on your block to use tissue culturing to propagate plants. Losely Nursery is in Perry, Lake County, 1000 feet east of Center Road on the south side of Route 20 (North Ridge Road). Do not be scared away by the description of the program. Anyone can learn this technique.

Saturday, March - 9 AM, Cleveland Museum of Art Greenhouse. Leon Santamary, head of the greenhouse at the Art Museum, will discuss the practicality, affordability and set-up of home greenhouses. Meet at the main entrance of the Art Museum, 11150 East Boulevard.

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The Annual Dinner will be on Saturday, November 16 at the Cleveland Museum of Natural History at 5:30 PM. Mark your calendars NOW so you do not make other engagements for that evening. Let's have a big turnout in '91.

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GROWING AND PROPAGATING WILD FLOWERS BY Harry R. Phillips et. al. Chapel Hill: University of North Carolina Press, 1985, rpt. 1989; 331 pages, $14.95.

The introduction says it all: most native plants sold by nurseries have been gathered in the wild. One purpose of this book, newly available in paperback, is to help professional and home gardeners propagate wild flowers themselves.

The author is curator of native plants at the North Carolina Botanical Garden, and he acknowledges the contributions of his colleagues. Although many horticultural instructions refer to the growing conditions of North Carolina, most apply equally to our region. The date — May 1 — cited as the average date of the last spring frost is correct for the Cleveland area and parts of southern Ohio; other sections of Ohio would be only a few weeks behind.

The book begins with brief chapters on soil preparation, garden maintenance, garden design and seasonal planting, and pests and diseases. These echo standard texts on horticulture, but they make a relevant point. Native plants, the authors want us to know, require the same preparation and care in gardens as do any other plants. There are also plans for herbaceous borders of wild plants in various settings, and Phillips encourages gardeners to experiment with integrating native and exotic plants.

For many gardeners, the greatest value will be in the chapters on propagating native plants. Phillips gives detailed instructions for collecting and storing seed, and his explanation of seed dormancy and methods for breaking it is exceptionally clear. Phillips also suggests ways to determine how much seed one may collect without harming a wild colony of plants, and to estimate the amount of seed needed to establish a nursery bed that might provide material for more extensive propagation.

The bulk of the volume, however, is a reference book of wild flowers. Phillips describes seventy-five wild flowers, a dozen carnivorous plants, and fifteen native ferns; in less detail he also describes species related to these.

These descriptions include complete instructions for collecting seed, beginning with an estimate of the speed with which it ripens, and for storing and planting it. Where other handbooks often say no more than, "Stratify," Phillips says (of the purple coneflower, Echinacea purpurea), "Then seal the flat in a plastic bag (or tightly cover the flat with a piece of plastic) and refrigerate (35-44°F) for four weeks." He is careful to identify plants of which seeds should be planted immediately after collection, or that need two seasons for full germination.

Phillips also gives summary instructions for cultivation and for asexual propagation where appropriate, and suggests uses in the garden and landscape for every plant. Even the skunk cabbage, Symplocarpus foetidus, has a place in his garden. Appendices contain instructions for organizing a plant rescue, a chart of blooming dates for Chapel Hill, and a production schedule for large-scale growers. The book has a few good color plates and hundreds of line illustrations, including not only flowers, but also roots and mature seeds.

This is a handbook for average gardeners, not experts, and it emphasizes familiar plants rather than rarities. Phillips believes that any gardener can propagate native plants, and the completeness and clarity of this book make that possible.

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Worth Reading: In the January 1991 issue of Natural History Magazine, pages 57-62, is an article by Jane E. Fancis entitled "Arctic Eden." It is a facinating story of her field work on Axel Heiberg Island, one of the northernmost islands in Canada's Arctic Archipelago off the coast of Greenland. Here she discovered the remains of a lush and semi-tropical forest that thrived during the Eocene era. She describes how such a forest came to be and how it survived the cold arctic winters, and what finally happened to it.

THE ROOT BOOK by Norma Phillips. Published by the author (6700 Splithand Road, Grand Rapids, MN 55744), 1984; 107 pgs. $9.50 + $1.75 shipping.

This small, spiral-bound book by the author of Adventures of a 'Wild' Plants Woman takes an unusual approach: it emphasizes roots, with crisp black-and-white photographs of the roots of some six dozen wild plants, from baneberry to Selkirk's violet and American columbine to ostrich fern. It's primarily a handbook for propagation, dealing with plants that can be multiplied through root cuttings or divisions. A terse entry for each plant gives clear instructions, but the value for propagators is in the illustrations, which make the accurate identification of dormant plants all but certain.

These two book reviews where submitted by Paul Solyn, Ohio University staff member.

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ASTER DIVARICATUS - WHITE WOOD ASTER by Jan Midgley

Aster divaricatus, or white wood aster, is an inconspicuous plant in its natural habitat of dry, heavily shaded forest floors. But bring this plant into cultivation in a garden with light shade and it becomes a true star. From August to October, this aster brightens shady corners throughout eastern Canada and south to Georgia and Tennessee in the United States.

A. divaricatus stands 1-3 feet tall. The basal rosette consists of 5-7 inch long, thin, heart-shaped, toothed leaves with slender petioles. The inflorescence is a flat corymb of numerous 1 inch wide flowers. The leaves of the inflorescence are ovate and smaller than the stem-leaves. Each flower has six to nine white, linear rays or petals. The central discs are yellow to pinkish to brown. The stems are flexuous, round, glabrate, and green to dark purple in color. When not in bloom, A. divaricatus can be confused with Aster cordifolius, heart-leaved aster. When blooming, the pale-blue flowers of A. cordifolius are quite distinctive.

In the wild, white wood aster may have two yellowish leaves and no blooms. Put the same plant into a prepared bed of loamy soil, however, and the leaves turn a robust dark green. A large planting

of A. divaricatus looks like a late-summer snow cover. Ideal light is two to three hours of morning sun or dappled shade under trees with the lowest limbs being 15 to 20 feet above the ground. On a heavily wooded lot, selective tree removal may reveal the presence of this aster. Though it may never have bloomed before and thus gone unnoticed, the increased light may produce a striking display. It is both moisture (too much or too little) and pH (5.5 to 7) tolerant. It is a vigorous self-seeder. Any unwanted seedlings can be easily hand pulled the first year.

The second year, the plant puts out rhizomes and these provide a ready source of new plants by division in spring or fall. Propagation is also rapid by seed or cuttings. Collect seed when the heads turn fuzzy and store them in a cool (34-42°F), dry place. No stratification is necessary. Sow heavily. Do not expect blooms the first year. Take two- to three-inch tip cuttings in June. Dust or dip in 0.1% or weaker IBA. Stick in a well-draining medium of half and half vermiculite/perlite or sand. Keep the cuttings and enjoy blossoms that September. These young potted plants will survive the winter weather with minimal protection.

White wood aster can be cut for flower arranging but looks fresh for only a few days. A better use might be as a floppy filler in planters visible from kitchen or dining area windows.

Potential companion plants for A. divaricatus should have similar cultural requirements, compete with the prolific spread of the aster, and fill the spring and summer bloom periods. The list includes: Anemone canadensis, Canada anemone (keep this aggressive plant in the shade); Chrysoganum virginianum, green and gold; Cimicifuga racemosa, bugbane; Geranium maculatum, wild geranium; Gillenia trifoliata, Bowman's root; Iris cristata, crested iris; Polemonium reptans, Greek valerian or Jacob's-ladder; Scutellaria serrata, showy skullcap; Smilacina racemosa, false Soloman's seal; Solidago caesia, blue-stemmed goldenrod; Stylophorum diphyllum, wood poppy; and Tradescantia virginiana, spiderwort.

I am unaware of any named selections of A. divaricatus, but a dark purple-stemmed plant grown from cuttings is available retail from Canyon Creek Nursery, 3527 Dry Creek Road, Oroville, CA 95965 (catalog $1.00) or wholesale from North Creek Nursery, RR 2, Box 33, Landenberg, PA 19360.

The above-mentioned selection has probably been to England and back. For more local plants, ask a friend or neighbor. Once you have it, you have plenty to share. Seed may be available from the North Carolina Botanical Garden in Chapel Hill, NC. Or locate a plant in the woods and collect a few seeds in late fall. I guarantee, the plants you grow in your garden will outshine any you've seen in the wild.

Reprinted from Native Notes, Fall 1990. Jan Midgley owns a wild plant nursery in the Washington, DC area.

GOOD NEWS: **Ohioans give record amount to ODNR tax check-off**

BAD NEWS: **New funds for natural areas cut from last two state budgets**

by David White

The state income tax check-off program allows Ohio taxpayers to donate all or a portion of their income tax refund to programs to preserve natural areas, scenic rivers, endangered species and non-game wildlife. In this article we will review what the tax check-off programs have accomplished, how the funds are spent, and the impact of the check-off on these programs. We will focus on the Natural Areas, Scenic Rivers and Endangered Species check-off fund, which is administered by the Division of Natural Areas and Preserves of the Ohio Department of Natural Resources (ODNR).

Good News: Because of the attention Earth Day brought to environmental issues, and promotional efforts targeted at tax preparers, 1990 was a record year for personal donations to the income tax check-off programs. The Natural Areas, Scenic Rivers and Endangered Species Protection Fund received donations of $717,750, while the non-game fund, "Do Something Wild," received $521,351. The combined total of $1,239, 101 is the highest in the seven-year history of the check-off program.

Bad News: Because of the availability of the check-off funds, the Division of Natural Areas and Preserves (DNAP) has not received needed allocations of General Revenue funding in either of the last two biennial state budgets. As a result, what were supposed to be supplemental funds for land acquisition, research and special programs are being diverted to the operating budget that is ordinarily funded through General Revenue appropriations.

Since its inception, the check-off program has enabled DNAP to acquire valuable natural areas, make needed improvements of facilities, and fund research into endangered species that would not otherwise have been possible. The Natural Areas check-off has brought in $4,593,774. As of June, 1990, DANP spent $4,124,812. Annually, check-off funds account for about one quarter of the Division's budget.

DNAP has been able to acquire 14 new nature preserves and scenic river areas and expand six others. Some significant new preserves include Lakeside Daisy in Ottawa County, the Chaparral Prairie in Adams County and the Kent Bog in Portage County.

Check-off donations have been critical to the expansion of the state's nature preserve system and scenic river corridors. "Without check-off funds, none of the land purchases would have been possible," said Richard Moseley, Chief, Division of Natural Areas and Preserves.

Since 1984 the Division has acquired 1,685 acres of land at a cost of approximately $1.46 million. Presently, DNAP has approximately $400,000 of check-off funds earmarked for a new acquisition.

Check-off revenue has also funded 96 research grants and special projects on endangered species and natural areas; provided money for the development of 35 visitor access facilities (boardwalks, observation decks, trail improvements, parking lots, and visitor centers); and salaries of preserve managers and seasonal staff.

Under the last two state budgets, DNAP has had to rely solely on check-off funds for both capital improvements and expanded staff to manage the new preserves. According to Moseley, the Division last received $60,000 for fencing around preserves, six years ago. Capital improvements include land acquisition and the construction of visitor centers and boardwalks; operating expenses include salaries and supplies.

A request for more than $3 million for capital improvements, including land acquisition and facilities improvements, was turned back by the Ohio Office of Budget and Management (OBM) in the 1991-92 capital improvements budget. Past requests by the General Revenue funds for the Division's operating expenses, primarily for new preserve managers and rangers, were also turned back by OBM, Moseley said. Those staff positions are currently being funded by check-off donations.

"The dependence on check-off funds for all land acquisition, and to subsidize staff and other expenses is a cause of great concern for check-off supporters and contributors," said Stephen Sedam, Executive Director of the OEC. "The original intent of the check-off funds were to supplement, not replace, funding for natural areas and scenic rivers programs."

The enabling legislation for the check-off programs reads: **"revenues provided by the contribution system are supplemental and are in no way intended to take the place of funding that would otherwise be appropriated for these purposes."**

Moseley offered several reasons for the lack of new revenue for the Division. Overall, ODNR has not fared well in the budget process in recent years. Within ODNR, nature preserves and scenic rivers do not receive as high a priority as other programs such as Parks and Recreation. This creates a pressure at budget time to use the check-off funds for capital improvements and the operational expenses needed to manage the new preserves.

Erie Partee, Executive Director of Little Miami, Inc., has long advocated that no operating expenses be covered by the check-off funds. LMI, an OEC member organization, is active in protecting and preserving the Little Miami, a scenic river.

"As long as the Division keeps tapping the fund for operating expenses," Partee said, "they will find it harder to get operating costs allocated from General Revenue. If we (LMI) know about the budget discussions, and are aware early on of what is needed, we could go out and support atempts to increase the Division's operating budget. We would be happy to work with them on getting those budgets passed."

The new state operating budget will be introduced in January, 1991. "Ohioans concerned about the use of check-off monies should use this opportunity to get needed funding to the Natural Areas Division," said OEC Executive Director Stephen Sedam. "It is also important to remind the next administration and the legislature that check-off donations are supplemental funds, to expand and enhance our natural areas, scenic rivers and endangered species protection."

Editor's Note: This issue was discussed at the December DNAP council meeting. Presently, no course of action has been agreed upon. However, each of our readers can write to their state legislators to voice their displeasure with the current policy, and can urge friends to write as well. The legislation enabling the income tax check-off in no way intended the tax check-off income to replace state budget monies.

Summary of all Expenditures from Check-off Donations January of 1984 to June 30, 1990.

Category	dollars spent	%of total
A. Land Acquisition	$1,469,260	(35.6%)
B. Facilities Development*	$896,485	(21.7%)
C. Special Projects*	$494,069	(12.0%)
D. Research and Preserve Monitoring*	$429,051	(10.4%)
E. Information and Education*	$288,695	(7.0%)
F. Administration*	$462,820	(11.2%)
G. Dept. of Taxation Fees	$84,430	(2.0%)

*Portions of expenditures in categories B-F were to cover permanent and seasonal staff salaries. Together these expenditures totalled $1,143,628, or 27.7 % of all check-off expenditures through June 30, 1990.

Source: DNAP Special Account, Income and Expenditures 1/84 -6/90. (7/12/90).

Sixteen sites acquired with check-off funds qualified for financial reimbursement totalling $525,000 through the federal Land and Water Conservation Fund. The balance of the DNAP check-off fund as of June 30, 1990 was $993,932.

In early 1991, The Center for Plant Conservation in Jamaica Plain, Massachusetts will be joining forces with The Missouri Botanical Garden. The CPC will move their operations to Missouri, remaining a separately chartered organization with their own Board of Trustees, by-laws, Director, budget and staff. The Garden will provide an umbrella of support resources including offices, technical support, personnel administration, accounting, and development. Together the Center and the Garden will be able to provide greater service to the field of plant conservation than would be possible separately. The Holden Arboretum is the Midwest Regional garden for the CPC.

THE AESTHETICS OF OPEN SPACE by Coleston Burrell

As I gaze with admiration upon an expansive meadow, it occurs to me that I belong to an elite group. I like meadows and prairies! I feel the moods of grass landscapes; the sensual smells of the sweet flowers and the soothing sounds of the dancing grasses. I delight in the subtle beauty of nature's color schemes, but I am in the minority. Most people consider grass landscapes to be fallow ground with lost potential, or worse yet, something unattractive, an eyesore. Some people are on the fringe. They might appreciate a grassland in the native landscape as a place to admire and leave behind, but few would invite this landscape into their daily experience of personal space. This is unfortunate, for the same aesthetic evocation can occur along roadsides, in public open space and even in the home landscape.

What are the origins of our prejudices about landscape? Why do we demand order from the natural world? Why are Americans obsessed with clipped lawns and manicured highway rights-of-way?

Many theories have been advanced to explain the origins of our cut-grass obsession. Perhaps our preference for expansive, emerald green lawns can be traced to our aboriginal beginnings. Human ties to open space may relate to our early evolution on the grass savannas of Africa, where the openness afforded a clear view of approaching danger.

More recently and directly our aesthetics have been ruled by the example set in English landscapes, where the manor house was surrounded by expansive lawns. These lawns were as symbolic of the wealth that was necessary to maintain them as they were of an aesthetic sensibility. This use of lawn works well in England where rainfall is plentiful year round and sheep accomplish the arduous task of mowing.

In America, early settlers were eager to duplicate the landscapes of their European homelands. The first order was to keep nature at bay by clearning the land. As settlement spread, purses bulged and colonial wealth surrounded itself with lawn.

So the trend has continued and spread with the advance of Europenas across continental North America.

Through association with my "elite" group which I fondly refer to as "meadow maniacs," I have broken with tradition and renounced the almighty lawn. Modern life is extracting a price on the environment that has caused many to reassess the need for this resource-consuming greensward. As water becomes more scarce and expensive, lawns are destined to shrink and a less resource-consumptive alternative must be found. The answer may lie in native grass landscapes.

There have been prophets whose teachings have promoted the use of native plants in regionally appropriate meadow and prairie landscapes. The prairie school, as espoused by Wilhelm Miller in his 1915 "The Prairie Spirit in Landscaping Gardening," promoted the use of native materials in ecologically appropriate settings. Landscape architect Jens Jensen used the open lawn, or meadow, as he called it, to create an abstraction of the midwestern prairie landscape. Native plants were positioned in the lawn grasses and along the edges of the lawn as transition into the woods. Mowing was minimal except in high-use areas, and then only after the spring wildflowers had bloomed. Throughout his life, Jensen's work matured to a sophisticated understanding of the natural associations of prairie plants. It is only recently that these teachings have begun to be incorporated into the mainstream American landscape aesthetic.

The current use of native species in gardens has initiated a curiosity about natural plant associations and natural habitats. Grasslands occur in various forms from coast to coast. In the western states grasslands exist between the coastal ranges and the Rocky Mountains. The dry slopes in the rain shadow of the Rockies are covered with dry grassland, or shortgrass prairie that extends across the western Great Plains. Moving eastward the shortgrass gives way to mixedgrass and finally tallgrass in the moist landscape at the interface of the forest and prairie. Oak openings occur along the western edge of the forest province and throughout the dry Ozark region. In these areas, plants of open sunny sites grow interspersed with forest species. West of the Appalachian Range, glades occur on poor limestone soils, where few trees except cedar can become established. Here prairie species intermingle with species from the eastern meadows. In the southeast, pine savannas occur where fire removes competition from woody plant species.

In the mixed forest region of the eastern United States, meadows occur as breaks in the forest, either through natural processes or at the hand of man. Meadows form naturally through changes in the landscape such as the silting in or draining of beaver ponds and deposition of sand bars in river drainages. Floodplains that receive periodic stripping by high water offer bare ground for colonization by sun-loving species. Meadows are also found on land that is too wet or dry to support woody vegetation. Wet meadows are especially common in New England, and occur in swales along the edges of pastures or other open areas. Dry meadows and glades occur on rock outcroppings, mountain slopes and sandy ridges.

Prior to European settlement, the primary force of change in forested areas was fire, which occurred through lightning strikes or was set deliberately by native peoples to provide open land for grazing game. The fires released nutrients and the sun-filled clearings were quickly colonized by pioneer species that started the process known as succession, which would eventually return the area to forest.

Today, the most common grass landscapes occur in abandoned agricultural land, which supports early successional, or old field meadows. These fields are first overtaken by pioneer species, generally a mixture of native and naturalized annuals that colonize open or disturbed ground. As soils are stabilized and enriched, an increasing variety of plants parades across the landscape, depending upon soil, moisture, and exposure. Grasses may colonize quickly or may come late to the evolving landscape. Through years of replacement of one plant or group of plants by another, the area will eventually return to forest unless there is intervention. The meadow gardener must attempt to arrest succession, especially woody plant invasion, by mowing or with fire.

Some meadow landscapes such as floodplains and swales are maintained in a more stable state by the natural forces that create them. Succession is slower and trees do not invade as aggressively due to high moisture levels for all or part of the year. An understanding of these natural processes and human influences is essential to our appreciation of grasslands.

Boundaries are important for giving context and background to grasslands. Whereas prairies once stretched for miles unbroken, meadows are moderately sized parcels bounded by woods or hedgerows. The edge, or interface between the woods and the meadow is an important visual feature that creates a smooth, natural transition. Equally important to the visual continuity of any but the smallest meadows are islands of mounding shrubs. These elements complete the natural scene.

With few exceptions, open areas are composed of some combination of grasses and flowering plants. Neither component can stand alone without creating an unnatural effect. In the midwestern and eastern states, the balance is tipped in the direction of the grasses, which dominate clearings, prairies and meadows, creating an ever-changing backdrop against which flowers open in season-long succession. Grasslands have seasonal rhythms of bloom, senescence and dormancy influenced by day length, moisture, temperature and availability of pollinators. Native herbaceous wildflowers, referred to as forbs, produce the majority of their flowers in summer and fall. Native grasses are categorized as cool season or warm season depending on the timing of growth and flower initiation. Cool season grasses begin growth early and flower in spring or summer. They go dormant during the heat of the summer. Warm season grasses begin growth later in the season, after temperatures moderate and days lengthen.

The only way to achieve a natural effect when attempting to create a grass landscape is to approximate the natural system. The degree to which these dictates are followed depends upon your intent. Will you create a garden of meadow flowers or will you meticulously recreate a meadow habitat? The choice is a personal one and should be based on the effect you are hoping

to achieve. The goals should be decided before the planting is begun. It is essential to make a clear distinction between gardening with meadow plants and meadow habitat creation. Both require horticulture, but the aim, philosophy and aesthetics are different.

The "canned meadows" that continue to receive popularity by offering promises of season-long bloom by simply scratching the soil and throwing down the seed have become a cliche for misguided attempts to duplicate an English meadow. English meadow gardens are modeled after hay fields and pastures. Flowers are produced in abundance throughout the spring and early summer, and the grass in which they grow is mowed or grazed after flowering. Despite a grass-based model, canned seed mixes promising to duplicate this look contain no grass seed. While the display may be colorful, the effect is anything but natural. This approach actually denies the nature of a meadow.

If we want to create a successful meadow garden or establish a meadow habitat, we must balance the components of the meadow the way that nature would, either symbolically or literally. This requires attention to aesthetic as well as ecological principles.

The landscape bestows regional character to different areas of the country. This regional character is governed by climate, topography, architecture and land use practices. The meadow landscape you create should reflect the regional character of your area. Black-eyed Susans, asters and goldenrods are as indicative of New England old-field meadows as bluebonnets and paintbrush are of Texas roadsides. For a recreated meadow landscape to be successful it must approximate the regional flora. Bluebonnets are no more appropriate for Minnesota than California poppies are for Massachusetts.

A more subtle but critically important aspect of regionalism is the genetic makeup of individual plant species, which may vary dramatically with latitude and longitude. For example, switchgrass (**Panicum virgatum**) from Nebraska is taller and coarser than switchgrass from Minnesota. When planted in Minnesota, the Nebraska plants look out of place and may cross-pollinate with local plants, thereby compromising the genetic integrity and changing the appearance of the Minnesota plants. These genetic changes may be manifested in altered flowering time, hardiness, susceptibility to diseases or aggressiveness.

This situation indicates the necessity of using local seed sources as well as choosing plants native to your locality when establishing meadow and prairie landscapes. This may seem extreme, but through careless horticulture we have introduced many pests, including purple loosestrife and oriental bittersweet that not only compromise the regional integrity of the landscape, but actually alter its ecological balance.

Without minimizing the importance of close attention to the above details for all plantings, it is of utmost importance to use local seed of regionally native species when attempting restorations or other plantings in proximity to undisturbed native areas. Plantings of this nature include rights-of-way, meadow or prairie restorations and conservation plantings.

The state of Minnesota has been very forward-thinking, and in 1987 appointed a task force to establish guidelines for wildflower plantings, especially highway beautification and restoration projects. The task force's final report pinpoints and elaborates on three areas of concern: public education, habitat protection and establishment of new plantings. The guidelines for establishment of new plantings address in detail the issues of seed source, species selection, planting techniques and timing.

The guidelines will be used by the Minnesota Department of Transportation as well as civic organizations working with the DOT to establish roadside plantings. The goal of the task force in writing guidelines was to protect the state's natural areas from ecological mishaps such as genetic swamping and to avert the introduction of nuisance weeds. It is hoped that other states will use the Task Force's report to develop similar guidelines.

Education is the key to understanding; understanding leads to appreciation. Through experience we are educated. The only way to adequately experience a meadow is to enter it. Once you feel the grasses brush against your body and smell the fragrance around you, you will be educated. The meadow experience is a sensual one, of sight, sound and smell that will reacquaint you with an ancient, innate rhythm.

Coleston Burrell is a garden designer and freelance writer. He has worked as curator at the U.S. National Arboretum and the Minnesota Landscape Arboretum. He is currently pursuing a Masters Degree in Landscape Architecture at the University of Minnesota. This article is a reprint from Meadows and Meadow Gardening by New England Wild Flower Society, Inc., Volume 5, Number 1 of 1990.

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MEADOW WILDLIFE by Nancy Sferra

Meadows may appear to be structurally simple when compared to a forest or wetland, but, under close scrutiny, the diversity of species found within a meadow can be astonishing. Normally, meadows with the greatest plant species and structural diversity will support the most species of animals, ranging from minute soil-inhabiting organisms such as mites to large mammals such as white-tailed deer.

For the nature observer whose interest lies in watching butterflies, a

trip to a meadow on a sunny summer day is guaranteed to produce plenty of subjects for study. Although some of the smaller skippers may prove to be difficult for the beginner to identify, a little patience and practice is all that's required. Before long, an enthusiast will be able to identify pearly crescentspots, American coppers, European skippers, common sulphurs, cabbage whites, and least skipperlings, to name a few. Often one can predict the presence of particular butterflies by taking a quick survey of the plant species growing in a certain area. For instance, a field with milkweed is sure to have some monarchs flying about. These butterflies depend heavily on milkweed as the most important food plant for their larvae.

Monarchs aren't the only species dependent upon milkweed. Red and black milkweed bugs feed on the seeds, and many species of insects feed on the flower nectar. The clearwing or hummingbird moth can often be seen hovering about milkweed plants as well as a variety of the meadow flowers. These moths are easily identified by transparent areas on the wings. Its scale-covered body has a "feathered" look and its hovering flight as it drinks nectar at flowers resembles that of a hummingbird.

Although most observations of small mammals, such as mice, shrews and voles, are usually restricted to quick glimpses as they dart for cover, their abundance is evident by signs such as burrow entrances, runways, and droppings. Animal species found in meadows dominated by grasses often differ from those found in meadows dominated by broad-leaved plants. Meadow voles are common in grassy meadows where they construct runways through vegetation or dig subsurface tunnels which terminate in grass-lined chambers. Voles remain active throughout the year, and although they will cache some food in their tunnels, they forage for food throughout the winter. If the ground becomes covered with snow, the voles are still able to use tunnels between the ground surface and the snow layer. In contrast, meadow jumping mice are found in meadows where broad-leaved plants predominate. This animal has large hind feet modified for jumping, and its long tail is used for balance during long leaps. Although they are capable of jumping up to seven feet in a single leap, short hops are the more common means of travel. They are true hibernators, spending six to nine months in an underground grass-lined chamber located below the frost line. They survive by slowing their heartbeat and rate of breathing, living off stored fat, and conserving body heat by curling into a tight ball to reduce their surface area. Only 30 percent of hibernating jumping mice survive the winter. Short-tailed and masked shrews are also common in some meadows. These small animals have such demanding food requirements that they remain active both day and night while foraging for food such as beetles and earthworms.

Small mammals, in turn, are food for predators such as hawks, weasels and snakes. One of the largest snakes in our area is the black racer, which can often be seen basking in the sun on a warm day. It is not uncommon to

see individuals over four feet long. American kestrels, members of the falcon family, hover overhead in search of prey which in the winter consists of small mammals. However, in the summer kestrels supplement their diet of mammals with insects, such as grasshoppers and dragonflies. Weasels, relatives of skunks and minks, also hunt small mammals and are especially adept, because of their long slender bodies, at digging mice and voles out of their burrows.

Meadows are the preferred habitat for a variety of nesting birds. The species found within a particular meadow depends upon the age of the field and the presence or absence of woody vegetation. In meadows dominated by thistles, one of the most commonly seen birds is the American goldfinch. These birds are just beginning their nesting season by the time most other species are finished. Goldfinches delay nesting until July when many field wildflowers set seed, ensuring adequate food for their nestlings. Goldfinches feed heavily on thistle seeds and they also line their nests with the soft down from the seed heads. Bobolinks, the only North American songbird whose back and head is lighter in color than its underside, can be found in grass-dominated fields. The bubbling flight song of the male makes this species conspicuous, but the nest is so well concealed in the grass that it is virtually impossible to find. Other common meadow-nesting birds include eastern meadowlarks, song sparrows, common yellowthroats and yellow warblers.

Some birds can be attracted to meadows by erecting nesting boxes in the appropriate areas. Tree swallows, eastern bluebirds, house wrens and American kestrels all use nest boxes. Competition for natural cavities as nesting sites is intense due to the scarcity of decaying trees and the introduction of starlings and house sparrows, both cavity nesters. Tree swallows are the earliest swallow species to arrive from the south in the spring; on cold days, when insects are unavailable, they feed on berries such as bayberry. However, in the summer they conspicuously forage in flight for insects. Until recently, meadows were deliberately created within forest tracts to provide habitat for certain species of animals. The edge between the forest and the meadow is often an area heavily used by wildlife. Recently, researchers have been questioning the benefits of destroying the forests for the sake of creating meadows. This increased forest fragmentation is thought to increase predation on forest-nesting birds as well as to decrease the habitat available for forest birds. However, the maintenance of existing meadows and the creation of meadows as an alternate to lawns is encouraged both for its aesthetics and value as wildlife habitat.

Nancy Sferra is a field biologist with the Massachusetts Audubon Society's Conservation Department. She is currently working on a project assessing wintering hawk use of meadow habitat at Daniel Webster Wildlife Sanctuary in Marshfield, Massachusetts. This article is also a reprint from Meadows and Meadow Gardening by New England Wild Flower Society, Inc., Volume 5, Number 1, 1990.

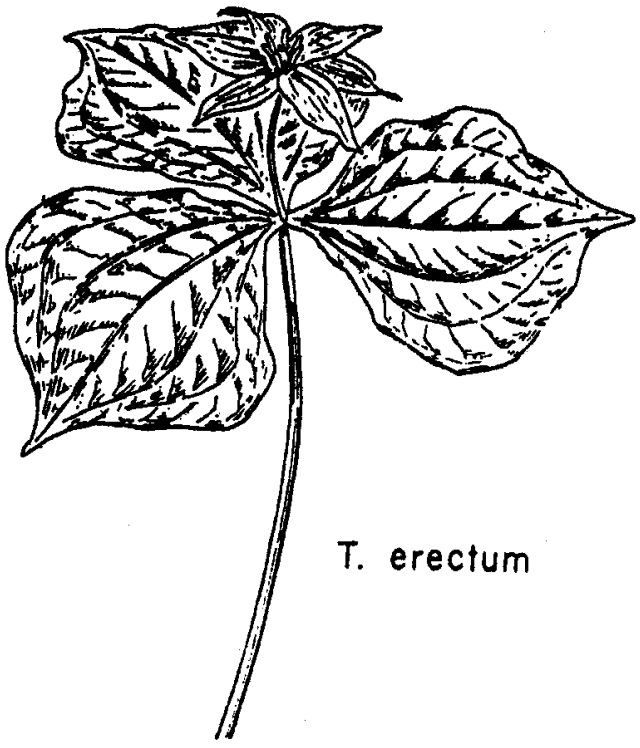
PURPLE TRILLIUM by Jean Andrews & Robert Lloyd

Purple trillium is one of several species of **Trillium** in Ohio which normally, have brown-purple flowers. It can be distinguished, however, by the erect or nearly erect, one to four inch-long flower stalk, which lifts the flower above the leaves. This perennial has a slender stem up to about 16 inches high. Near the top of the stem is a whorl of three leaves. The solitary flower has lanceolate to ovate petals up to two inches long and appears in April or May.

Purple trillium can be found in mountainous regions, in rich woods from New England to Michigan and south through Ohio and West Virginia to Kentucky, Tennessee, Georgia and North Carolina.

Purple trillium has a number of other common names. These include Birthroot, Bumblebee root, Dishcloth, Ground lily, Ill-scented trillium, Indian balm, Lamb's quarters, Rattlesnake root, Stinking Benjamin, Three-leaved nightshade, Illscented wakerobin, Indian shamrock, Nosebleed, Orange blossom, and True love. Several of these refer to obvious, perhaps "interrelated" medicinal properties of the plant. Chewing of the root is supposed to slow down heart palpitations, and to ease the pain of childbirth. Roots have also been used to control hemorrhages and treat skin infections.

Native American women would commonly use **Trillium** as a love potion. They would simply boil the root and then drop it in the food of the desired man. There is an old Indian story of a young woman who desired the chief's son, so she boiled the root of the trillium and took it to put in his food. On the way she tripped, and the root fell into the food of an old man who promptly ate it and followed the unfortunate woman around for months begging her to marry him.



T. erectum

Two of Ohio's trillium's are endangered. Prairie wake-robin (**T. recurvatum** Beck) is the only Ohio trillium with sessile flowers and petaloid leaves. It flowers in mid to late April. Although common in Indiana, in Ohio it is found on calcareous soils in dry to moist open woods only in Auglaize and Clermont counties. Painted trillium (**T. undulatum** Willd.) is easily recognized due to the red color at the base of the red-veined white petals, which it produces in May and June. Painted trillium is restricted to the remnant hemlock-white pine-northern hardwood forest in Ashtabula County.

Trillium propagation is difficult and time consuming. Trilliums need between

five and seven years to reach flowering size when grown from seed. Plants dug from the wild and transplanted into gardens will bloom for a year or two but the vast majority will then die. Trilliums should never be picked.

This article is a reprint from **Turkey Feathers**, the Hocking Valley Audubon Society issue for Spring 1990.

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WILDFLOWER SEEDS: ECONOMICAL AND SATISFYING by Barbara F. Pryor

Vivid wildflowers, adapted to a wide range of locations, are outstanding additions to home landscapes. To encourage gardners to grow more native plants from seeds or spores, the New England Wild Flower Society is offering for sale more that 175 varieties of wildflowers and ferns in their 1991 Seed List.

Included in the List are natives for woodland, wetland, and meadow gardens. Early blooming wildflowers add color to spring shade gardens while many of the sun-loving varieties are vibrant splashes in summer borders. Once established these perennial wildflowers bloom for many years.

All requests for the 1991 Seed List must be received by March 1, because seed sales close March 15. Requests will be filled in the order received. The Seed List is an adjunct of the Society's world-wide seed distribution effort.

Send $1.00 and a self-addressed, $.45 stamped envelope (#10, business size) to Seeds, New England Wild Flower Society, Garden in the Woods, Hemenway Road, Framingham, MA 10701. No requests for Lists will be honored without the stamped envelope.

Members of the New England Wild Flower Society will automatically receive the Seed List in January, 1991.

WHAT IS A NATIVE PLANT? by Larry Morse

All plants are native plants. Native somewhere on Earth, that is. Of greater interest to botanists, horticulturists, biogeographers, and conservationists, is the question of whether a particular plant is native to a particular place or region. While we can usually tell quite easily, there are interesting exceptions.

Native means naturally occurring, but it means furthermore that the species itself is naturally occurring, not just an individual plant or population of it. (A species is **naturalized** in an area if it persists and maintains itself, but came originally from a different place as a direct or indirect result of human activity.) At one extreme are **endemic** species, those natives occurring only in the region of interest, such as the Virginia sneezeweed (**Helenium virginicum**), known worldwide only from two counties of Virginia. Most native Virginia species, however, are more widespread, occurring in our state but also occurring naturally elsewhere. Put differently, most of our native plants are endemic to North America but are not endemic to Virginia.

Non-native species are often called exotics or aliens. In most cases, we know their regions of origin, and often know when and where they were first introduced to North America. (George Washington and Thomas Jefferson, for example, were among early experimenters who tested which exotics could grow in Virginia.) Many of our exotics were deliberately introduced species which later escaped from gardens, farms, or forest plantings. Other exotics, including many weeds, arrived unintentionally, and have become established parts of our flora. There are a few instances of plants that the Indians introduced to Virginia, such as the pumpkin, but the bulk of our exotics are Eurasian, and arrived since 1492.

We also have a number of North American natives that occur in Virginia only as exotics, for example the Osage orange. Along these lines, the wildflower gardener should note that many species labelled "native" in the catalogs are simply native to North America, and not necessarily native to Virginia. The **Atlas of the Virginia Flora** presents the best current information on the native or exotic status of Virginia's vascular plants.

Over geological time, the concept of 'native' becomes more difficult, since species' ranges change in response to climatic change and other forces. We often speak of many of the distinctive high-elevation plants of our mountains as Canadian species, but at the middle of the last Ice Age, there was little if any habitat for them in Canada. Yet, these species were much more abundant in Appalachia then than they are now. Thus, these plants aren't persisting Canadian natives at all, but Appalachian species that have moved northward into Canada since the continental glaciers melted.

Similarly, some of our coastal species of southern affinity, such

as long-leaf pine, probably moved into Virginia sometime in the past 18,000 years from places further south; we call them native, but Virginia is not their real long-term family home. Successful species can also expand their ranges naturally; for example, the white trout-lily is a Midwestern plant that has reached northern Virginia by crossing the Appalachians along the Potomac.

In the strictest sense, a true native would be one found growing in the place it first evolved, what biogeographers call **autochthonous.** At levels finer than a continent or broad region, autochthony is difficult to prove, since we rarely know just how, where, or when a particular species actually originated.

For everyday use, it's the relatively simple distinction of native and exotic that has proven most useful. In conservation, we generally try to protect or maintain native plant species—those that occur naturally in the area—and discourage or eradicate exotics. In gardening, we take pride in growing our native plants, the species that occur naturally in our own region. In horticulture, we seek to explore new uses, and new variants, of our native species, drawing upon their natural genetic diversity. In botany, we study the habitats and distribution patterns of our native plants to learn more about the natural history of our region and the origin and composition of our vegetation. "Native or exotic?" should be among the first questions one asks about a plant.

This article has been reprinted from **The Bulletin**, Summer 1988.

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ABOUT THIS NEWSLETTER

If the format looks familiar to you, that's because the previous editor of "On the Fringe" has put out this issue. The several members of Cleveland NPS who have come forward to work on the newsletter were unable to gather material in time to publish by January first. This newsletter is important since it carries the 1991 program and details of the May Field Trip Weekend. **"On the Fringe" needs volunteers to work on it. In addition, write to Tom Sampliner at 2651 Kerwick Road, Cleveland Heights, Ohio 44118, and tell him what you want to see in your newsletter.** Your input is important to help the new editorial board put out a newsletter that is pleasing to you.

NATIVE PLANT SOCIETY OF NORTHEASTERN OHIO
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