



On The Fringe

Journal of the Native Plant Society of Northeastern Ohio

Elizabeth Martin -- 1909-2005

We regret to inform you of the death of Elizabeth Martin at the grand old age of 96. Many of our readers will not recognize her name, but all who care about our native plants will recognize the legacy she left us all. Hers was the first wildflower garden at Holden, on the north hillside as you descend into today's garden. I do not remember all the dates exactly but in the late 50's she started a wildflower identification class at the Cooper Building. Holden was in its infancy and there were not the public buildings of today. For me, this was a defining moment – I was hooked. In addition to the classes, I helped her with the wildflower garden and one of my cherished memories was of a Turk's Cap lily, at least six feet tall and so laden with blossoms it could hardly stand erect.

Along with her classes and garden, she and her husband, Paul, Superintendent of the Arboretum, took trips to West Virginia, Michigan, Wisconsin and other places, hunting for orchids. Now the second bug had bitten me. I listened to her stories of discovery, green with envy, never thinking that one day I would follow the same trails.

In May 1982 when we had a Wildflower Weekend at Holden, she was active in starting the Native Plant Society of Northeast Ohio. At the May 1983 Prairie Weekend at Holden Elizabeth was made a lifetime Honorary member in recognition of her support of the burgeoning wildflower movement in general and the Native Plant Society in particular. Through the early years she was a presenter at meetings and a guide on wildflower walks. Her husband, Paul, passed away in 1977 and shortly after she retired. In her later years her daughter recalls driving her to places where she could see the wildflowers from the car window. To the end she remained interested in the native plants and read our Journal. Elizabeth was an inspiration to many and she affected my life immeasurably. Her spirit lives on in the grand and glorious wildflower garden of today, and in all who follow in her footsteps. –Ann Malmquist

Naming of Cooperrider Herbarium, Kent State University

Tom S. and Miwako K. Cooperrider provided a major gift to the Department of Biological Sciences at Kent State University in Ohio to support a herbarium research facility that is unique among the nation's universities. This facility, now named the Tom S. and Miwako K. Cooperrider Herbarium, will serve as a laboratory to document the changing flora of the region, and provide a reference collection to assist in plant identification for the KSU community and beyond, repository for vouchers supporting research studies, and housing for specimens on loan from other herbaria. Dr. Cooperrider serves as Flora of North America regional reviewer for the northeastern United States.

From the newsletter of the Flora of North America Project, Vol. 19, No. 1, 2005

The 2006 Program and Field Trip Schedule will be mailed to the membership along with a form for 2006 membership renewal.

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The Journal of the Native Plant Society of Northeastern Ohio is published 4 times a year at Novelty, Ohio. Questions or comments are welcome and may be addressed to Jane McCullam, 9880 Fairmount Road, Newbury, Ohio 44065, 440-338-3253; npsohio@hotmail.com; or to Ann Malmquist, 6 Louise Drive, Chagrin Falls, Ohio 44022; 440-338-6622, inky5@juno.com

Program Schedule

Jan 22, Sun: MEMBERS SLIDE SHOW - 2:00 PM. - The West Woods Nature Center, Geauga County. Discover the diversity of flora found around Ohio as members share their best photos, including field trips from 2005. Directions: Take St. Rt. 87 east from Rt. 306 approx. 2 miles to the park entrance on south side of the road. If you are bringing slides to share, please call Ami Horowitz to add your name to the program: 216-921-9242.

Feb 18, Sat: BEAUTY & SUSTAINABILITY: Gardens for the 21st Century - 8:30 AM-4:00 PM. Day-long conference at the Cleveland Botanical Garden with topics including Ecology and Gardening, Partners for

the Future, Design for Low Maintenance, The 4 R's of Native Plants, and a panel discussion by local experts. For information call Kathy Hanratty at (440) 477-5468 or email oldefarm@aol.com.

Mar 26, Sun: NATIVE PLANTS OF CENTRAL AND SOUTH AMERICA - 2:00 PM. The West Woods Nature Center, Geauga County. Travel through Belize, Peru and Brazil with NPS Board Member Ami Horowitz as he shares the beautiful native flowers of these countries. Directions: Take St. Rt. 87 east from Rt. 306 approx. 2 miles to the park entrance on south side of the road.

Presidents Corner

By Judy Barnhart

On October 28 the Native Plant Society held their annual dinner at the Cleveland Museum of Natural History. Over 70 people enjoyed dinner and conversation amongst the dinosaurs in Sears Hall. Dr. James K. Bissell, Director of Conservation for the Cleveland Museum of Natural History, received the \$500 annual grant to be used toward land purchase of the Kingsville Swamp Protection Project. The Chinese raffle raised almost \$170 dollars for the Endowment Fund which is used to support the annual grant. Three lucky winners walked away with a Florian Lawton print of *First Snow*, a new copy of *Ohio's Natural Heritage* and copy of the new book *Wildflowers of Tennessee, the Ohio Valley and the Southern Appalachians*. We debuted the recently designed informational brochure with the 2006 program slate included. We hope this colorful new brochure will attract new members to the society. You will receive a copy in the membership renewal notices being sent out shortly. Afterwards, we listened as Dr. Mariano Ospina shared slides of the wonderful diversity of orchids found in Columbia, South America. Thank you to all who made this night a success.

We hope you join us for upcoming programs, lectures, and field trips throughout 2006. To add a social aspect to events, come a little early for light refreshments and a chance to share common interests with other members and participants. For early morning field trips where access to electricity is limited, bring a thermos of your favorite beverage and we'll provide a snack. We also plan to hold a picnic after a summer event. Watch upcoming issues of the Journal for details.

Hope everyone has a wonderful holiday season and we look forward to sharing our love of plants in the new year.

The Mistletoes

by David Taylor

As autumn fades into winter, dark green clumps perched in trees along roads and fencerows stand out once again. Some trees, especially black cherry, now exhibit gnarled or stub branches, the telltale sign of a current or past infestation even if the plant is unseen. Birds may be seen plucking white berries from the clumps, and occasionally a person may be seen scouting trees from which to gather some at a later date. The object of attention? — mistletoe.

In Kentucky and neighboring states, we think of the thick-leaved, usually dark green plant we see growing in hardwood trees in towns and along country roads. This is only one of many species of plants known as mistletoe. Before returning to the mistletoe familiar to us, we will take a survey of the mistletoes.

Mistletoe Families

The plants commonly known as mistletoes belong to one of two families, the Loranthaceae and the Viscaceae. Two other less familiar families of 'mistletoes' are the Eremolepidaceae and the Misodendraceae. All have in common a *hemiparasitic* relationship with a host plant, almost always a woody plant. Hemiparasites derive water, minerals, and occasionally food (sugars) from the host plant, but are photosynthetic and produce at least part of their own food. The lesser-known families are briefly mentioned first.

The **Eremolepidaceae** family is variously placed in the Loranthaceae or the Santalaceae depending on the author (see Watson and Dallwitz 1992-2003, Nickrent, 2003a). It is a small family of 4 genera with 12 species. They are distributed in New World tropics. All are small shrubs, with attachments made to stems of woody plants. They may have well developed leaves or scale-like leaves. Flowers are somewhat showy or small and inconspicuous. Seeds form in berries in which they are coated with viscous material. Seeds are largely bird-dispersed. They are found the West Indies (*Antidaphne*, *Eubrachion*, *Eremoiepis* = *Antidaphne* in some views, see W³ Tropicos 2003) and South America (*Antidaphne*, *Eubrachion*, *Lepidoceras*).

The **Misodendraceae** is a small family of one genus (*Myzodendron*) and 11 species.

They are distributed in the New World tropics, southwest South America, and Antarctica. All are small shrubs with attachments made to stems of *Notofagus*, southern beech (Nickrent 2003). Leaves are either scale

leaves or well developed. Flowers are mostly small and inconspicuous. The fruit is dry and seeds are wind-dispersed.

The **Loranthaceae** was once considered a large diverse family, but in the last 40 years, a subset of the family has been recognized as the Viscaceae. The Loranthaceae in the strict sense is a tropical family inhabiting both the Old and New World tropics, but with species found in temperate regions. About 70 genera and over 900 species are known in the family, ranging in habit from trees (*Nuytsia*) to shrubs to lianas (Watson and Dallwitz 1992-2003). Most genera in the family and all of the mistletoes make their parasitic attachments to stems and branches of woody plants, but a few genera attach to roots. The plants are generally evergreen and have either normal or scale leaves. Flowers tend to be large and showy. Fruits are usually berries and most seeds are covered with a viscous coating. Seeds are primarily bird-dispersed. North (Central) American genera include *Cladocoeia*, *Struthanthus*, *Psittacanthus*, and *Dendropemon*.

Cladocoeia is a poorly understood genus consisting of about 23 mostly rare species, predominantly found in central and southern Mexico. These species occur as shrubs or nearly vines in both hardwoods and conifers. **Struthanthus** consists of 50-60 species occurring from northern Mexico (very close to the U.S.) to southern South America. This too is a difficult group of species and many are rare. They occur primarily in hardwoods, but also infect conifers.

Psittacanthus (parrot flower) is found throughout the New World tropics, as far north as central Mexico (Geils, et al. 2002). Most members of this genus have large, showy — often red or orange—flowers (see a photograph at Nickrent 2003). [Ed note: Or go to Google Images.]

Dendropemon occurs further south in Central America and South America. *Dendropemon* is also known from the West Indies with some species endemic to the region (see Correll and Correll 1982). The species in these latter two genera tend to be rare, found in small scattered patches. Individual plants of these genera are usually vine-like or small shrubs. They usually occur in hardwoods but are sometimes found in conifers and sometimes in enough concentration to cause economic damage to timberlands.

The **Viscaceae** is the family of 'true' mistletoes. The family consists of 7 genera and about 450 species. The

family is dispersed in temperate and tropical climates of both the Old and New Worlds, but is best developed in the tropics. All species are shrubs with attachments to branches and stems of woody plants. Leaves are leathery to herbaceous or scale-like. Flowers tend to be small and inconspicuous. Seeds are produced in a berry filled with viscous tissue (Watson and Dallwitz 1992-2003). Seeds are primarily bird-dispersed. North American genera are *Arceuthobium* (also occurs in Europe and Asia) and *Phoradendron*. *Viscum* occurs in Europe and has been introduced into California and Canada (Geils et al. 2002).

Phoradendron ("tree thief") consists of about 200 species scattered through the temperate and tropical regions of the New World. Most of its distribution is in Mexico and Central America. About 12 species are found in the U.S. and one, *Phoradendron leucarpum* (also seen in recent literature as *P. serotinum* and in older literature as *P. flavescens*), in the southeast U.S. including Kentucky. Species of *Phoradendron* tend to be dark green, although ailing and dying plants may be light green, and a few are reddish. Most have typical, but leathery leaves. A few have reduced leaves. Plants are either monoecious or dioecious. They produce small inconspicuous flowers and a small white, pink or red berry, which contains 1-2 seeds and a sticky material, viscin, by which the seeds stick to tree limbs. Birds are known to spread the seeds by wiping beaks and feet clean of the viscin and attached seed on limbs. Gravity also disperses seeds, usually within the same tree. Individual plants may reach more than a meter across, but usually are about 1/3 meter across.

The genus is most frequent in hardwood trees, especially (in the U.S.) oaks, maples, black walnut, hackberries, black cherry, mesquites, and manzanitas. The common mistletoe of Kentucky is in fact sometimes called oak mistletoe because of a tendency to occur on oaks especially in the southeast U.S. Some species are conifer specialists infecting primarily junipers, but also true cedars, firs and pines. A few species will infect both hardwoods and conifers. A few are also known to infect mistletoes (Geils et al. 2002). This double layer of parasitism is known as epiparasitism or hyperparasitism. In the Southeast and Kentucky, infections are in hardwood trees. R.L. Thompson and coworkers (Thompson 1992, Thompson and Noe 2003) of Berea College have looked at the distribution of mistletoe in host trees in Kentucky. T. E. Hemmerly and students (Rucker and Hemmerly 1976, Hemmerly et al. 1979, Hemmerly 1981, Hemmerly 1989) of Middle Tennessee State University have

looked at the distribution and host specificity of mistletoe in Tennessee.

Phoradendron seldom causes economic damage to forest lands, but has been documented in nut tree and fruit orchards where the loss can be substantial. In some cases, infestations of a magnitude to cause significant mortality occur, usually in conifers. Individual trees anywhere may succumb to vigorous infestations of *Phoradendron* and treatments, although difficult, are available (Nickrent 2003, Geils et al. 2002), but the mistletoe does not seriously affect most trees.

Arceuthobium ("juniper life," from its parasitic nature on junipers and related trees), the dwarf mistletoes, consist of about 42 species distributed in both the Old and New Worlds. About 39 of these are restricted to North and Central America. The plants range in color from green to orange to reddish or even black. They have greatly reduced scale leaves, leaving the stems as the major photosynthetic organs. They produce small inconspicuous flowers and plants are dioecious. The fruit is a 1-seeded, sticky berry, which in most species is hydrostatically explosive. Spread is through this explosive action. Individual plants are seldom over 20 cm across, and often as small as a few centimeters across. Some workers have submerged several of the species into *Phoradendron* (USDA-NRCS 2003).

The genus is a conifer specialist infecting members of the Pinaceae (pines, firs, Douglas fir, hemlock, spruce) and Cupressaceae (junipers, true cedars). In the U.S. (Rockies and west), pines and junipers are frequently infested. The genus does not occur in the southeast U.S., but one species, *A. pusillum*, occurs in the Great Lakes states and the Northeast.

Arceuthobium frequently causes economic damage to forest lands. Most damage occurs in pine forests, but damage also occurs in Douglas fir forests. I have seen mixed white and yellow pine forest at 3000 m elevation in the Sierra Madre Occidental of Mexico covered with *Arceuthobium* plants. Studies have shown that about 60 percent of the explosively ejected seeds end up on the original host plant resulting in additional infection. About 90 percent of the remaining 40 percent lands on adjacent trees (Geils et al 2002). The net result is rapid, efficient spread of the mistletoe that results in both decreased growth and death of trees. Numerous control strategies exist (see Geils et al. 2002). The extent to which this genus can become a pest is reflected in the formation of a research group to study it, The Mistletoe Center at the Rocky Mountain Research Station (see <http://www.rms.nau.edu/mistletoe/>) and publications such as that by Geils et al. (2002).

Viscum ("sticky," in reference to the coating around the seed) is an Old World genus of about 150 species occurring in both temperate and tropical regions. It infests primarily hardwood trees, especially oaks. The common European mistletoe, *V. album*, also infects apples and some evidence points to a decline in this species as apple orchards are converted to other uses (Briggs 2002). It is generally yellow-green with normal, somewhat leathery leaves. It produces small inconspicuous flowers and a 1-2 seed berry within a viscous substance. Seeds are bird-dispersed in the same way that those of *Phoradendron* are. It seldom causes economic damage to forest lands.

The Lore Of Mistletoes

Mistletoes figure in legends, customs and medicines. Aeneas, the father of the Roman people according to Virgil, sought the 'golden bough' when he chose to visit hell. This golden bough, *Viscum album*, provided him with protection and magical powers on his journey. Whether the Druids of the British Isles were aware of this myth is not known, but they revered the plant as well.

The mistletoe of the Druids is *Viscum album*. It is not certain why this plant held the prominence in Druidism it did. Suggestions have been made, however. Tainter (2002) provides an easily read summary. To the Druids, oaks were sacred. It is surmised that a plant appearing live in winter, which also grew on some of the sacred oaks was viewed as more sacred or magical than even the oaks (although much is speculation—see Briggs 2002). Myth or legend has it that mistletoe was used in some sacrificial rituals. Conversion of the Celts to Christianity diminished the practices of the Druids, but some belief in the magical powers of mistletoe helped to propel the plant into the Christmas season custom of kissing under the mistletoe. Briggs (2002) suggests this custom arose from the mistletoe's symbol of friendship rather than of fertility. The custom was brought to the New World with English colonists who found *Phoradendron leucarpum* along the mid-Atlantic coast and in southeast colonies. New Englanders are known to have used the small, scale-leaved *Arceuthobium pusillum* (eastern dwarf mistletoe) in much the same way.

Mistletoes In Medicine

Like many plants, mistletoes have been used for medicinal purposes, and like many plants, the characteristics that make them useful as medicines also make them toxic. *Phoradendron* mistletoes are harvested as nutritional forage for livestock in some

areas of Central and South America (Geils et al. 2002). Cattle poisoning has been reported (HerbMed, 1998-2003). People in these areas consume tinctures of *Phoradendron* species as a stimulant tonic and medicines for childbirth (stopping post-partum hemorrhage) and other conditions (Geils et al.). A number of recent trials have looked at *Phoradendron* and *Viscum* extracts for treating (slowing) some cancers and HIV (HerbMed 1998-2003). In recent years, health food stores sold mistletoe teas

These mistletoes, however, contain toxic amines (tyramine and beta-phenylethylamine). Both are known to cause gastroenteritis and an occasionally fatal drastic lowering of blood pressure (Blackwell 1990, Tampion 1977). Some individuals develop dermatitis after contact with the plant. Other studies have shown that even with the ingestion of a few berries or leaves, toxicity is mild, but may include seizures (HerbMed 1998-2003). *Viscum* is believed to have similar properties (Tampion 1977). At one time, doctors in France widely prescribed mistletoe to lower blood pressure.

Mistletoes At Home and Beyond

If you drive around Kentucky this winter, especially central Kentucky, look for the telltale balls of mistletoe in hardwood trees. Remember that is just one of many species of *Phoradendron* mistletoes and one of about 1500 species of mistletoes worldwide. Consider the human history of mistletoes presented above and search your library and the web for more.

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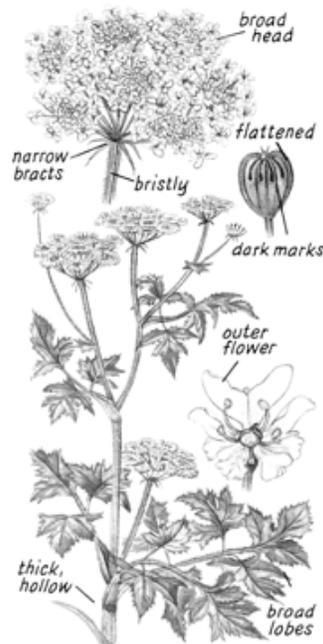
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Reprinted from *The Lady Slipper*, Winter 2003-04

Giant Hogweed
Heracleum mantegazzianum

Giant hogweed is a tall (up to 15-20 feet in height), herbaceous, biennial plant that invades disturbed areas across both the Northeast and Pacific Northwestern United States. Giant hogweed is designated as a federal noxious weed because the sap it produces can cause skin sensitivity to UV radiation, leading to blistering and severe burns. The large stem is hollow and usually blotched with purple. The leaves are deeply lobed, sharply pointed and up to 5 feet in width. The white flowers are on a large umbrella-shaped head that can be up to 2½ feet in diameter. Giant hogweed can invade a variety of habitats but prefers moist disturbed soils such as riverbanks, ditches and railroad right-of-ways. Giant hogweed is native to Europe and Asia. It was first introduced into the United States in 1917 for ornamental purposes.



Beetles Making Progress Against Purple Loosestrife

Rich Dunbar

Purple loosestrife is an invasive weed that spreads across wetlands, displacing native plants and disrupting natural communities. It has been 10 years since IDNR first released the beetle *Galerucella* to control purple loosestrife. Since then, we have released the beetle at 48 different sites.

Purple loosestrife is a long way from disappearing, but each year *Galerucella* noticeably reduces purple loosestrife at more and more of those release sites. And, the beetles are flying from the release sites to nearby wetlands.

The data we have collected confirms our visual observations. As yet the purple loosestrife plants are no fewer, but they are much shorter and/or flowering much less and producing fewer seeds. Shorter loosestrife is less able to crowd out the native plants, allowing the native plants to recover. Pictures of the dramatic decreases that *Galerocella* can cause may be seen at www.in.gov/dnr/entomolo/programs/purple2.htm.

Two other insects are helping us control purple loosestrife. We have released a root-mining weevil (*Hylobius*) at 14 sites and a flower-feeding weevil (*Nanophyes*) at 5 sites. Neither is likely to produce the dramatic results of *Galerucella*, but they should help over the long haul.

We will keep working to achieve an actual reduction in the number of purple loosestrife plants. So far *Galerucella* has been able to reduce their size and open up space for native plants in a wetland far too big for us to control by spraying. That is an encouraging start.

Rick Dunbar is Northeast Regional Ecologist for the Indiana Department of Natural Resources. Reprinted from the *INPAWS Journal*, Spring 2005

Fragrant Sumac

by Catherine Siddall

My earliest encounter with fragrant sumac (*Rhus aromatica*) taught me that fragrant does not necessarily mean sweet-smelling. I was asked to prune some unruly specimens that were encroaching on a stairway, and I left smelling pungent with the shrub's peculiar earthy, resinous odour. A few of fragrant sumac's other names - polecatbush and skunkbush, for instance - make reference to what some have called its "malodorous" qualities. I wouldn't go that far, but neither would I recommend sticking your nose in the blooming flowers to sample their fragrance or rubbing the leaves for pleasure.

In fact, some people come away with itchy skin after contact with this plant, and my exposed forearms did develop a temporary rash after my pruning efforts. This characteristic is not unexpected when you realize that fragrant sumac is a close relative of poison ivy (*Rhus radicans*, synonymous with *Toxicodendron radicans*). The list of North American tree species in the same family includes several plants with "poison" in their common names, although these have been helpfully grouped under the genus *Toxicodendron* - a name that should warn of the plants' nasty properties. To help with identification, fragrant sumac has three-part compound leaves, like poison ivy.

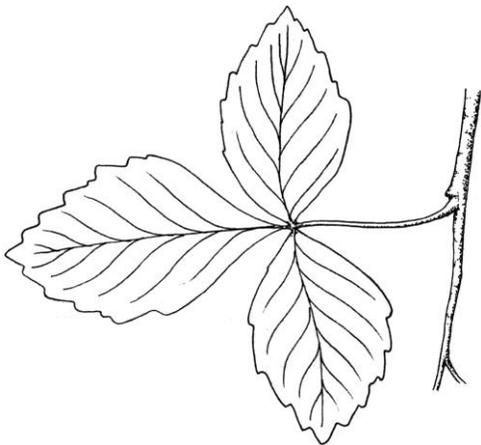
Both differ from the innocuous taller sumacs whose large pinnately compound leaves can have as many as 27 leaflets.

Although the fragrance maybe unappealing, and the allergenic properties a possible concern, I have developed a great admiration for the many useful and distinctive qualities of fragrant sumac. It shares with the other sumacs characteristics we easily identify with

this group of plants: compound leaves that turn variable colours (orange through deep red) in fall, fuzzy red fruit, curving branches and a suckering habit. However, it is distinctly different in other respects. It matures to about 1.5 metres (five feet) in the more northern part of its range (from Manitoulin Island to the west and Ottawa Valley to the east in Ontario). By contrast, I have seen staghorn sumac specimens (*Rhus typhina*) over three metres or 10 feet high. (Some references say they can grow over 12 metres or 40 feet.)

While the larger sumacs tend to sucker prolifically, and rapidly form colonies in full sun, fragrant sumac is slower to develop suckering growth and will eventually form a dense shrub even in a fair bit of shade. It is not prone to any serious pests or diseases. I have never even seen a nibble on the leaves, a testament to the plant's tough nature. These characteristics alone make it an excellent choice for difficult shady spots in low-maintenance gardens or naturalized sites. What's more, like the other sumacs, fragrant sumac is tolerant of a wide range of soil conditions and is often found in infertile soils that receive little moisture. It has a great ability to cling to slopes, serving to stabilize the soil with its shallow fibrous root system. It is a relatively short-lived pioneer species that prepares the way for longer-lived trees and forest plants.

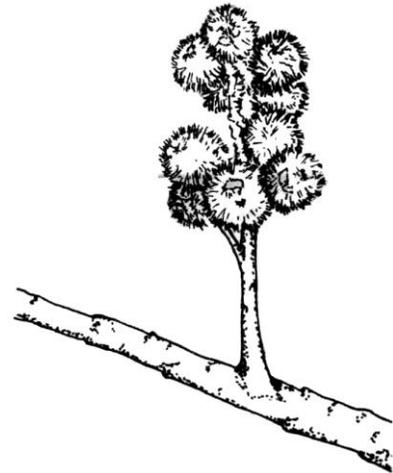
Like other members of the *Rhus* genus, the female *R. aromatica* bears a fuzzy red duster of fruit, but it's smaller: the round terminal mass of fruit is only four centimetres (about 1 1/2 inches) in diameter. The yellow dusters of flowers appear early in spring. The tan-brown male catkins develop during the summer and persist through fall and winter. I have never found any



Fragrant Sumac leaf



blossom



fruit

plants identified as male or female when purchasing them from nurseries. To increase the odds of planting at least one female that will produce fruit, it is recommended that you purchase a minimum of two specimens. Although birds obviously don't relish the sumac's fruit as much as they do serviceberries (*Amelanchier* spp.) or other tastier types, both the stems and fruit are eaten by many species of wildlife. A manual for environmental designers on North American native trees and shrubs, written by Gary Hightshoe, rates fragrant sumac's wildlife value as very high, saying it provides "winter food for many upland game birds, songbirds, large and small mammals, hoofed browsers".

Humans have also found many uses for fragrant sumac over the centuries. First Nations Peoples took advantage of the astringent properties of the leaves and bark by making poultices. The root was made into a concoction to treat diarrhea. The bark and berries were used in medicines. Due to the high tannin content of the leaves and bark, fragrant sumac was used for dye and for tanning leather. The fruit can be made into a tea that tastes rather like lemonade.

Fragrant sumac has an extensive range that includes all of the United States east of the Rockies as far south as Kansas and Louisiana, and north into Ontario and southwestern Quebec. Although there is little concern about its rarity throughout most of its range, in Quebec the small population is listed as threatened. *Rhus aromatica* is cold-hardy to USDA Zones 3 or 4.

Virtually all the gardens and naturalization projects I have designed include fragrant sumac. I find there is always an area that will benefit from the addition of this tough plant with its fall colour interest. Often it is relegated to a "trouble spot" with low light levels, poor soil and dry conditions. I have used it successfully on a

steep south-facing slope under oaks and maples where little else survived.

Fragrant sumac is growing well on a strip of inhospitable land sandwiched between a roadway corridor and a busy Toronto street. My business partner, Michelle Cope, and I designed this particular naturalization project for local residents who had raised the money and enthusiasm to plant these public lands with native plants. In another of our projects, *Rhus aromatica* is expected to survive in an area in a small park that is exposed and dry, and has had trucks run over it several times. Fragrant sumac has a greater chance of taking the abuse than the other plants and may act as protection for them.

Michael Dirr, author of *Manual of Woody Plants*, says of fragrant sumac that although it is "somewhat of a second-class citizen", he "cannot remember any (of the hundreds he has seen over the years) that were offensive". He adds: "I suspect that when a planting becomes overgrown it can be easily rejuvenated with a large mower, bush hog or other instrument of destruction". I hope nothing like this happens to any specimens I've planted, but then again, I won't object or worry if deer decide to chow down on them over winter.

Catherine Siddall designs, builds and maintains gardens. She is a long-time member of the Toronto and Parkdale Horticultural Societies and NAWS. Catherine is a partner in Siddall and Cope which offers services to groups wanting to establish community gardens or naturalization projects. Call her at (416) 531-2253 or rc.siddall@sympatico.ca

Reprinted from *The Blazing Star*, Winter 2004.
Newsletter of the North American Native Plant Society

Weeds Gone Wild

Weeds Gone Wild: Alien Plant Invaders of Natural Areas is a web-based project of the Plant Conservation Alliance's Alien Plant Working Group, that provides information for the general public, land managers, researchers, and others on the serious threat and impacts of invasive alien (exotic, non-native) plants to the native flora, fauna, and natural ecosystems of the United States.

This site provides a compiled national list of invasive plants infesting natural areas throughout the U.S., background information on the problem of invasive species, illustrated fact sheets that include plant descriptions, native range, distribution and habitat in the U.S., management options, suggested alternative native plants, and other information, and selected links to relevant people and organizations.

[Ed note: This site is being written largely by volunteers. Many plants need someone to write their descriptions.]

From the website <http://www.nps.gov/plants/alien/>

Into the Wild:**Reintroducing Native Plants – Solution or problem?****Rick Enser**

On a warm, late spring morning a volunteer botanist is searching a northern New England woodland for a rare orchid. Soon after arriving at the site he happens upon a different plant not previously thought to occur in the area, Golden Seal (*Hydrastis canadensis*). Knowing this to be a listed species in New England, he prepares a field survey form before resuming his search for the orchid. He also wonders if the Golden Seal was planted at the site by an amateur propagator interested in preserving the region's supply of medicinal plants.

On another day, while inventorying aquatic plants in southeastern Connecticut, a different botanist discovers a previously unknown population of a sedge called Square-stemmed Spike-rush (*Eleocharis quadrangulata*). In New England it is found only in Connecticut where it is listed as state endangered. Subsequent searches uncover more populations in the vicinity which raises questions regarding the true status of the species. It is eventually determined that the plants had been grown by a local nursery for use in wetland mitigation, then used in the field without the knowledge of state natural heritage personnel. These are true stories that have been widely discussed within the plant conservation community because they illustrate an increasing dilemma regarding the reintroduction into the wild of rare plant species.

Biologists agree that for some endangered species establishing new populations may be critical to their survival, but there is a need for guidelines to prevent doing more harm than good. This issue is important to the Rhode Island Wild Plant Society since we promote the propagation and use of native plants. Many rare plant species are offered at the RIWPS annual plant sales, including at least one species, Northern Blazing Star (*Liatris borealis*) which has been propagated using seed collected from the wild Block Island populations. These sales have worthy purposes, raising funds and promoting the use of native plants in backyard landscaping, and the plants are sold with the belief that the buyers are not using the material to create new "wild" populations. There are groups, however, that actually promote questionable uses of nursery-grown native plants. United Plant Savers is an organization dedicated to preserving native medicinal plants through a wide range of activities, which includes encouraging members to "replant threatened species in their natural habitats." Target species include American Ginseng

(*Panax quinquefolius*) and Blue Cohosh (*Caulophyllum thalictroides*), both listed as endangered in Rhode Island. Also, with growing interest in habitat restoration and mitigation, many nurseries are beginning to specialize in propagating a wide variety of native species. There are reasons to be concerned. First, inappropriate plant introductions can degrade the integrity of natural heritage data because endangered species lists are based on naturally occurring populations. In the case of the Square-stemmed Spike-rush cited above, the discovery of the nursery plantings could have legally removed the species from the state endangered list. A second and potentially more important issue concerns disrupting the genetic identity of local native populations by introducing plants from other regions. Every species exhibits variation, i.e. different genotypes, throughout its geographic distribution. Individuals in one part of the range may vary considerably from those in another part because of characteristics acquired in response to local environmental conditions. These variations may only be evident genetically, that is, plants from all parts of the range may look alike. However, if these disparate plants are mixed, the genetic makeup of one may overwhelm the other, contaminate the native stock and lead to inbreeding and loss of vigor in the native population. Other possible problems, such as the spread of diseases and pest organisms and mismatching pollinators or dispersing agents, may cause a loss of reproductive output in new populations. Also worrisome are the potentially harmful activities beginning to occur under the right-sounding term of "compensatory mitigation." These projects are often driven by development pressures and seek to reduce impacts to threatened native populations by either moving them to "safe" sites, or establishing replacement populations in nearby areas. This may occur in response to regulatory requirements, or simply to lessen guilt over destroying the original population. Whatever the motivation, they are too often accomplished without sufficient knowledge of the long-term habitat needs of the species in question. Unfortunately, many of these projects produce a false sense of accomplishment when initial establishment of plants is successful, but proper monitoring and follow-up is not done to validate reintroduction.

Considering all of these problems, the New England Plant Conservation Program (NEPCoP) is

attempting to define guidelines for plant reintroduction. The issue needs thorough deliberation soon because a few highly touted successes have led to a dangerous perception that natural populations are easy to recreate - and therefore are expendable. But, even if clearly defined, plant reintroduction guidelines are nearly impossible to enforce and projects are fraught with uncertainty. Several basic principles for introducing plants into the wild can be identified. First, this should be a technique of last resort, with the intent always to preserve plants only as they occur in their natural habitats. Second, reintroduction efforts should be directed to those species which are truly imperiled, i.e. in danger of extinction at the regional, national, or global levels. This would establish new populations to offset the risk that one catastrophic event could extirpate the species. Third, reintroductions should be performed only when the target site provides all the known habitat requirements, including soils, hydrology, and other special needs such as pollinators and associated species. Finally, long term management requirements, and a plan to monitor the target populations must be fulfilled. Some methodological protocols should also be followed: A.) seed or plants should originate from local populations, B.) a rigorous plan for the experiment — all reintroductions should be regarded as experimental activities — should be developed, and it should require long term monitoring and evaluation, and finally, C.) regulatory permitting must be considered.

Given the challenges of reintroduction, there have been success stories. A recent one is the recovery of Robbin's Cinquefoil (*Potentilla robbinsiana*), an alpine species known only from the peak of Mount Washington, New Hampshire. Using seed collected

from the few surviving plants, new seedlings were propagated at the New England Wild Flower Society and transported to the mountaintop to augment the existing population. Remarkably, the new plants have taken and the species has been downgraded from its former federally endangered status. In Rhode Island a second population of the federally endangered Sandplain Gerardia (*Agalinis acuta*) has been successfully established. With only one known population in the state, located on private property, the intent was to establish a second population at a secure site with similar habitat traits — an Audubon Society of RI refuge. Using seed collected locally the project has been successful, though many years of monitoring and micro management will be needed. These successes should not be considered poster children for other such projects. Reintroduction is a time-consuming, resource-gobbling technique which must only be attempted as a last resort by those with the required specialized qualifications to do it in a way that optimizes success, and with minimum risk to the existing plant community.

REFERENCES: Raithel, C. 2003. "Two populations are better than one: Attempting to introduce a population of the endangered Sandplain Gerardia." *Rhode Island Naturalist* 10(2):3-5

Reprinted from the Rhode Island Wild Plant Society's Newsletter, *WildfloraRI*, v. 18, n.2.

The Rhode Island Wild Plant Society (RIWPS) is a nonprofit conservation organization dedicated to the preservation and protection of Rhode Island's native plants and their habitats. For additional information about RIWPS please contact them at www.riwps.org.

Aliens in Their Native Land

by Stanwyn G. Shetler

Rick Enser, in his interesting and perceptive article *Into the Wild, Reintroducing Native Plants — Problem or Solution?*, raises some fundamental challenges to the dogma and practices of today's native plant movement. I share his concerns and have expressed similar ones in a number of recent articles and a chapter in a forthcoming book on plant conservation (see references). I offer here some thoughts on the subject, intended as perspectives, not prescriptions.

Today there is wide concern about endangered species and the general loss of biodiversity. A number of forces, most notably the Endangered Species Act, have sparked major efforts to catalog and monitor our natural heritage and, when possible, restore species on

the brink of extinction. This has put a premium on being "native." "Is it native?" is the first question a leader gets on any botanical field trip these days. So zealous are we sometimes to keep nature native that we promote questionable means of perpetuating and restoring native species and ignore the historical dynamics of gene flow and the natural processes of origin, dispersal, and colonization.

In the realm of plants, a native plant movement has taken root at all levels of government and among scientists and natural resource leaders and managers, bringing a heightened awareness even to the public at large to the status of the native flora and the growing number of threats to its integrity and welfare. Many

new native plant societies have been formed, and they are playing an increasing role in educating the public and shaping public understanding of the importance of the diversity of native plants in our natural ecosystems. It is essential, therefore, that the programs and activities of the native plant societies be scientifically sound.

Among the priorities for the native plant societies surely none is higher than saving and protecting the native flora in all its diversity in situ, that is, in the wild. Ultimately, the only secret to saving species in the wild is to save their habitats. Open to question, then, is the frequent preoccupation in native plant circles with growing native plants and sponsoring programs that foster the rapidly growing commercial trade in native plants for landscaping and/or reintroduction into the wild. "Plant only natives" is a kind of new orthodoxy in ornamental gardening, restoration, and mitigation. We in the native plant societies have made such a virtue of planting natives that the message is "more is better, there is no down side to planting natives whenever and wherever you can."

It all comes back to the question, What is a native plant? "Native" is elusive to define. A species can be native on a continental level, for example, but be introduced at a regional or local level within the continent. The nativeness of a species is not a magical intrinsic property but a process by which the individuals and populations originate and disperse. These individuals and populations are native only so long as the process is natural and not artificial, i.e., tinkered with.

Theoretically, the native flora is the original flora, the species and races that were present in an area before human settlement or some arbitrary ancient time and those from elsewhere that have since expanded their historical ranges naturally to include this area, without having been brought in by direct or indirect human assistance. But how do you determine what is original or what has immigrated naturally? How do you delimit human assistance?

This brings us to the science of plant geography (phytogeography), which includes the study of modern plant distributions and historical centers of origin and patterns of dispersal. The native range of a flora or species can be reconstructed or inferred from a variety of evidence, including the fossil record and today's high-tech molecular findings, but the principal evidence comes from painstakingly plotting and comparing historical and modern distributions, the individual records coming mainly from herbarium specimens. In this process, it all depends on the accuracy and authenticity of the individual points that are plotted

from the specimens. A distribution map is only as reliable as its individual dots.

The confounding element is human interference, deliberate or inadvertent, and the examples that Enser cites in his article highlight this point. Such interference falsifies and distorts the natural distribution of a species by the deliberate introduction of a native species where the species does not now occur or never did occur naturally. Thus a native species becomes an introduced species, opening the door for naturalization and obfuscation of the true natural range.

The crux of the matter lies in the distinction between the species and the individual. The species is an abstraction, but the individual or population of individuals is the tangible, map-able entity. Thus, when a native species is planted, the species may be native, but in fact the actual individual or population is introduced. Physically and genetically, it is, in a manner of speaking, an alien native because it is an individual or population out of place. Ironically, while it masquerades as a native, a neighboring exotic may have immigrated and colonized without apparent human help and be more natural in the habitat than the planted native.

In my opinion, sowing or transplanting turns natives into introductions or aliens. Thus, dispersal by humans will always transform natives into aliens, no matter how near or far they are moved. Unless very good records are kept and monitoring is perpetual, the history of plant migration is falsified a small bit every time a native species is deliberately planted in the wild, and the work of the phytogeographer, on whom we must depend in the first place for the delineation of native ranges, is confounded. Thus, in the name of doing good, we work against our own best interests when we plant native species in the wild. It is rather like biting the hand that feeds us!

Gardening with native plants can be rewarding and very educational. For these and other reasons it is appropriate for native plant societies to encourage the use of native species within planted or formal landscapes. At the same time, gardens are gardens, and a landscape of planted natives is just as much a garden as a landscape of exotic species from across the world. Questionable, however, is the growing practice of what might be called "gardening" in nature, such as moving rescued natives elsewhere in the wild or using various mixes of native species to beautify roadsides. Reclamation and restoration projects also fall into this category. Justifiable as planting native species to restore habitats or mitigate damage and disturbance often is, these are, nonetheless, basically gardening

projects that make deliberate introductions. Nature revegetates remarkably fast, and in many cases it would be cheaper and ecologically more sensible to let nature be nature, an option rarely taken. Deliberate planting does not guarantee against invasive aliens, as might be argued. The first question should not be whether to plant natives but whether to plant anything. As Enser suggests, a reintroduction should be made only for very compelling reasons.

The bottom line for native plant societies comes down to our very reason for existing. Are we here to save natural habitat or to add to the planted landscape? When it comes to the revegetation of land, do we advocate natural process or active management?

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Stanwyn G. Shetler, Botanist Emeritus of the National Museum of Natural History, is a member of numerous plant societies and wrote this response at the request of the PNPS.

Reprinted from *Notes of the Pennsylvania Native Plant Society*, Oct. – Dec., 2004

Book Review:

Guide to Gardening with Native Plants Returns to Print

Scott, Jane. *Field and Forest: A Guide to Native Landscapes for Gardeners and Naturalists*, ISBN 1 9930665-61-X, paperback, 195 pages, \$23.95.

<http://www.BlackburnPress.com>

Illustrated with 100 of the author's delightful line drawings, *Field and Forest: A Guide to Native Landscapes for Gardeners and Naturalists* is a useful manual to gardening the natural way.

Both inspirational and instructive, this book provides an introduction to the principles of naturalistic gardening. More than that, author Jane Scott shows readers how, through the craft of gardening, to put these principles into practice. Readers will come away from the book with a basic understanding of how to capture the essence of natural landscapes in their gardens, as well as with an appreciation of the native flora around them.

Early chapters deal with how nature functions and how landscapes were formed over time. Man's intentional and unintentional impact on the development of plant communities is also addressed. Four specific plant communities – deciduous woods, open lands, wetlands and dry lands – are described fully.

Later chapters skillfully depict ecological landscaping—an approach to gardening based on the understanding and appreciation of nature established in the earlier chapters. Jane Scott shows how to recreate and maintain a native landscape in one's own

back yard. She also discusses how to reclaim landscapes smothered by introduced plants.

First published in 1992 and now returned to print by The Blackburn Press, this thoughtful book has proven a charming companion to field guides for nature lovers and gardeners alike.

Jane Scott was born in New York City but grew up in Connecticut and on the Eastern Shore of Maryland.

She is also the author of *Between Ocean and Bay, a Natural History of the Delmarva Peninsula* and was a contributor to *The Nature Company's Guide to Natural Gardening*. For several years she wrote a local newspaper column called "Woodland Diary" and has published articles in *The American Horticulturist* (now called *The American Gardener*), the Canadian journal *Wildflower* and a number of other publications. She has also served on the board of various conservation organizations, such as the Delaware Nature Society and the Eastern Shore Land Conservancy, and was a member of the committee that founded the annual conference "Native Plants in the Landscape" in Millersville, Pennsylvania. She now lives in Chestertown, Maryland.

Reprinted from *The Lady-Slipper*, journal of the Kentucky Native Plant Society, Fall 2004.

Botany 101-20: Common Plant Families**Bean Family**

by Dr. Rebecca Dolan

Bean Family = Fabaceae (aka legume family or Leguminosae)

4000 genera and 9000 species of mostly warm-temperate regions worldwide.

In Indiana, 32 genera and 93 species.

Characteristics

Trees, shrubs or herbs worldwide, ours are mostly herbaceous.

Flowers distinctly bilaterally symmetrical; corolla of 5 petals forming a standard, 2 lateral wing petals, and a keel (two petals more or less fused at the lower margin). The standard is located to the outside of the 2 wing petals.

Leaves usually pinnately compound.

Stamens 10.

Fruit a legume, that is, a typically dry fruit with several seeds that splits down both sides.

Seed with food usually reserved in the cotyledons.

Economically important members of the family.

Important sources of high-protein food, oil, and forage: soybean, kidney beans, cowpeas, garden peas, chick-peas, lentils, alfalfa, clover, peanuts.

Plant Products

Indigo dye; ornamentals such as sweet pea, bluebonnets, wisteria; soil-improving trees such as black locust (they harbor beneficial bacteria in bumps on their roots that take nitrogen from the air and convert it into a form plants can use).

Common Indiana plants in the bean family

Wildflowers, both native and non-native including clovers, peas, milkvetch, vetch, lupines, wild indigos, bushclovers, and tick-trefoils.

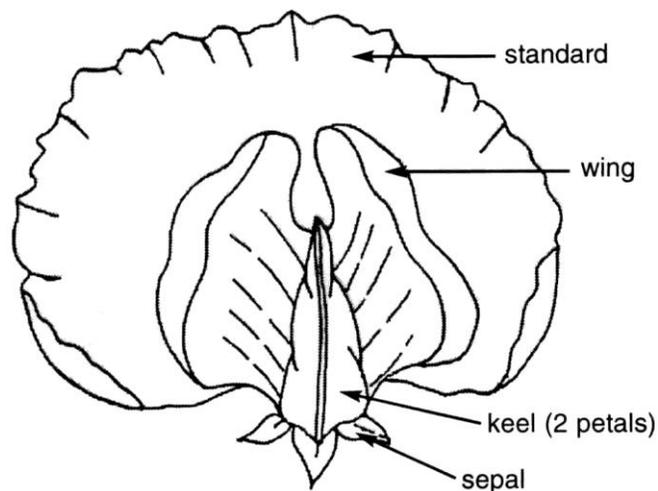
A few trees, including red bud (*Cercis canadensis*), black locust (*Robinia pseudoacacia*),

honeylocust (*Gleditsia trianthos*) and Kentucky coffeetree (*Gymnocladus dioica*).

Yellow-wood (*Cladrastis lutea*) is a rare and beautiful native tree more common in the Appalachians than it is here. Only a few native populations persist in Indiana, in the area in and around Yellowwood State Forest in Brown County. We have an old specimen tree of Yellow-wood in Holcomb Gardens here at Butler. It has an enormous spreading crown, tight gray bark, and beautiful clusters of white flowers, like white wisteria, in the spring.

Becky Dolan is the Director of Friesner Herbarium at Butler University.

Figure from: Jones, S.B. and A.E. Luchsinger. 1979. *Plant Systematics*. McGraw-Hill, Inc. New York, NY.



Papilionaceous flower of the family Fabaceae; note that the standard is located outside the wing petals

Tinker's Creek State Nature Preserve

Emliss Ricks

Good opportunities for viewing waterfowl, heron, and beaver; spring wildflowers.

In pioneer times the area around Tinker's Creek was a source of fear and foreboding to the local settlers. According to historical reports. The area was full of "sink holes" and "quicksand." While few would live in these low wetlands, many would hunt the plentiful game found here. Development in the area was slow, but in the late 1800's the New York, Chicago, and St. Louis railroad (Nickel Plate Road) built a line through the western edge of what is now the preserve.

Construction of this embankment caused even more water impoundment, resulting in the extensive swampland just east of Tinker's Creek itself.

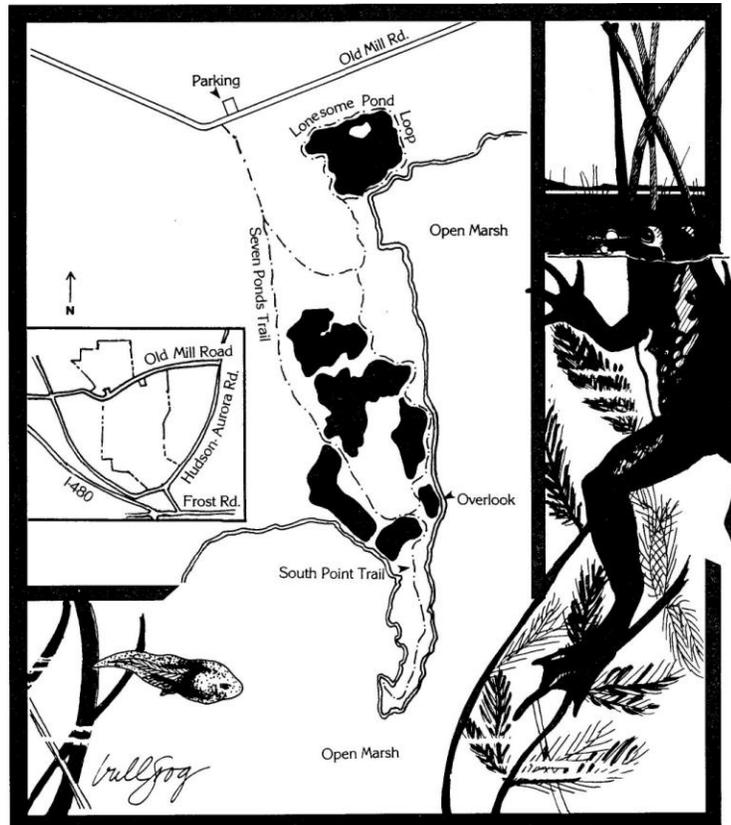
In recent years millions of acres of valuable wetlands have been drained and replaced by farmland, real estate development, industrial complexes, and even landfills. Once-thriving plant and animal communities have been driven from much of their former domain and still face an uncertain future. The preservation of wetlands not only ensures the continued existence of these communities, but of our most precious resource, fresh water.

The Preserve

Tinker's Creek rises in northern Portage County and flows across a high plateau region of bays, swamps and marshes before cascading through a deep gorge and entering the lower Cuyahoga River. Tinker's Creek State Nature Preserve lies amid thousands of acres of rich peat, swamp and marshland. The nearly 786-acre preserve teems with a great diversity of plant and animal life. Nesting waterfowl and songbirds can be seen during the spring and early summer. Canada geese and wood ducks nest throughout the marshes and can be observed from the trails around the Seven Ponds area.

Beaver ponds dot the preserve and add to the diversity of plant and animal life by providing habitat for greater numbers of species. Whitetail deer, raccoon, mink, weasel, muskrat and fox are some of the mammals frequently spotted along the trails. Among the reptiles and amphibians present are snapping turtles, water snakes, four-toed salamanders and bullfrogs.

Even though it is located near a large metropolitan region, the Tinker's Creek area has remained isolated



from development and has kept much of its pristine charm and, natural integrity. Tinker's Creek was dedicated as a state nature preserve in 1974, thus preserving a valuable watershed and natural community for future generations of Ohioans.

Trail System

Much of Tinker's Creek State Nature Preserve is inaccessible to pedestrian traffic because of wet and swampy conditions. However, visitors can enjoy the 1/2 mile trail which circles through the Seven Ponds region of the preserve. This trail, traversing open field areas as well as hardwood and evergreen stands, gives the visitor a closer look at the vast marsh that surrounds the much smaller upland trail area. This is an excellent spot for birding. Geese and herons usually can be spotted along this section of trail.

The South Point Trail extends southward through a dense stand of oaks, beeches and maples to the tip of the upland peninsula. From South Point visitors can see the beaver ponds and marsh to the south and west. The trees and shrubs in this area flash with the colors of wood warblers in mid-May.

Lonesome Pond Loop is a short trail around an isolated spring-fed lake. Here one can truly feel the tranquility of solitude within several hundred yards of the parking lot. The work of beavers is readily apparent all around Lonesome Pond, from the lodge on the south bank, to the cut and stripped saplings below the banks of the pond.

The trails are seasonally wet and mosquitoes and deerflies can be pests in summertime. Wear sturdy hiking shoes, appropriate seasonal clothing and insect repellent in summer.

New York Monkshood: A Rare *Aconitum*

Gordon Mitchell

[Ed. note: this is a federally-listed endangered species.]

Northeastern Ohio is home to some pretty rare native plants. One example of a rare native plant that is found in this area is the New York Monkshood (*Aconitum noveboracense* A. Gray ex Coville).

The New York Monkshood is a member of the Buttercup or Crowfoot Family (*Ranunculaceae*) and of the *Helleboroideae* Subfamily. The generic name, *Aconitum*, is Latin for *akoniton* (or *akonitos*), which is Greek for a poison. (Its origin may have come from Aconitus Hill of Ancient Greek mythology. This is the hill where Hercules battled Cerberus, the multi-headed watchdog of the Underworld. During the battle, Cerberus spat out large quantities poisonous foam. Wherever this poisonous foam landed, Monkshood flowers would emerge.) The specific epithet, *noveboracense*, is Latin for "New York". Other common names for this plant are Northern Monkshood, Northern Blue Monkshood, and Northern Wild Monkshood.

The New York Monkshood is a toxic plant. All parts of this plant are toxic, especially in the roots and shortly before the flowers bloom.

The toxins within this plant are the alkaloids aconine and aconitine. Both of these are subclasses of the diterpenoid alkaloids. Consumption of this plant may lead to burning in the mouth and throat, abdominal pains, numbness, irregular heartbeat, and even death.

The New York Monkshood has Old World relatives that were used as a deadly poison throughout Old World history. These Old World plants were even called the "mother of poisons" by some of these early cultures.

Location:

Located in Portage/Summit counties southwest of Aurora. From the junction of SR 82 and 43, proceed south on SR 43 approximately 1 mile to Hudson-Aurora Road. Follow Hudson-Aurora Road 2 miles southwest, then 2 miles west on Old Mill Road. The preserve is adjacent to the railroad tracks.

Reprinted from a brochure published by the Division of Natural Areas and Preserves, Ohio Dept. of Natural Areas, 1987.

Illustration & map by Barbara Alexander.

Despite this plant's high toxicity, some folklorists consider the Monkshood as a symbol of chivalry or of knighthood.

Description

Perennial

Height: 2-3 feet.

Stem: Erect.

Weak. Stem is hairy near the top.

Leaves: Simple. Alternate. Each leaf is palmately lobed or is deeply cleft into 3-5 irregular segments.

Flowers: Blue or violet. Flowers are arranged in short, terminal racemous clusters. Each flower is about $\frac{3}{4}$ inch long and is

bilaterally symmetrical. The calyx consists of 5 sepals. The upper sepal is hooded or helmet-shaped and covers 2 of the lower sepals. There are 2 oval lateral sepals and 2 narrow bottom sepals. The corolla consists of 2 petals that are both spurred and are concealed within the hooded helmet. There are numerous stamens on each flower. Flowering season is usually August to October.

Fruit: Pod or follicle. Each follicle contains numerous seeds.

Root: Tuberous.

Habitat: Moist sandstone cliffs, cool shaded ravines, and stream banks



Gordon Mitchell works for the Columbus, Ohio, Metroparks and is a member of the Columbus Native Plant Society.

Who Is Mrs. William Starr Dana?

by Mary Finger

Wild flower lovers recognize Mrs. William Starr Dana as the author of *How to Know the Wild Flowers*, an old-fashioned, but still used and treasured field guide. My own copy of *How to Know the Wild Flowers*, ink stained and worn on the spine and edges, was given to me by my grandmother when I was ten years old, and it had belonged to my great-grandmother before that. It was printed in 1894, the year after its original publication, and was already in its fifth edition, which says something for its early popularity.

Mrs. Dana tells you things you don't find in more up-to-date field guides. She may begin by explaining reasons for a plant's common or botanical name, where and when to find it, and perhaps something of its interesting characteristics. She often brings a poet to her aid in describing a flower and frequently provides a reference to what a writer or scientist has had to say about it. Her knowledge ranges from the ancient Greeks to Shakespeare and on up through the years to her contemporaries. In each case the narrative is prefaced by a botanically accurate description of the plant, neatly printed in small type.

Off and on over the years, I have wondered about its author. Who was this woman who not only knew her wild flowers but wrote so engagingly about them? This woman, who in proper Victorian style, used her husband's name instead of her own. Was she a trained botanist? A dedicated amateur? The wife of a botanist who accompanied him on his field trips?

The librarians are wise to her. They know that she is Frances Theodora Dana Parsons, 1862-1952, and they catalog her that way, sometimes including Smith, her maiden name. For a long time that was about all I could find out. But recently my luck began to change when a friend in women's studies sent me some information she had unearthed, and I had the good fortune to locate Frances Parson's privately printed autobiography, *Perchance Some Day*.

I learned from the autobiography that one day in the early 1890s Mrs. Dana walked boldly into the office of Charles Scribner and asked him to publish her book. Although Mr. Scribner didn't know it, not one word of the book had yet been written. She says, "riding up Broadway in a trolley car I noticed the always fascinating window of Scribner's bookshop. Before I quite realized what I was doing I had signaled the conductor to stop and, walking into Scribner's, asked to see the head of the firm.... My heart was in my boots," she writes. "I was entirely unprepared for this

interview. No notion of such an escapade had previously entered my head." When she explained what she had in mind, Mr. Scribner replied that the subject was one in which probably not more than six people in the country would be interested. Mrs. Dana patiently insisted that he would find he was mistaken. Next the publisher pointed out that the book she proposed would require illustrations and asked if she had an illustrator in mind. She promptly responded with the name of Marion Satterlee, a friend of hers. "I answered quite truthfully," she writes, "for at that moment and at the moment only I decided that regardless of the fact that I knew little of her ability along such a line and that I more than suspected the incredulous scorn with which she would greet the whole idea, Marion Satterlee should illustrate my already imminent book."

Perhaps impressed by the fact that Marion Satterlee was related to the artist George Satterlee, Mr. Scribner agreed to look at the book. Since the manuscript was at that point nonexistent, it was up to Frances Dana to produce it, or at least enough of it to show to the publisher, and to enlist Marion Satterlee's help. She got back on the trolley and went directly from Scribner's to the Satterlee apartment.

Frances Dana had anticipated her friend's reaction accurately. When asked to illustrate a wild flower book, Marion Satterlee protested that she didn't know how and delicately implied that perhaps Fanny, as her friend called her, didn't know how to write one either.

But Frances Dana persisted. Although the foray into Scribner's had been unplanned the idea for such a book had been in her mind for a long time. Her interest in wild flowers had begun when, as a child, she spent summers in Newburgh, New York. She searched her grandfather's extensive library for something about wild plants and found nothing. To remedy this, her mother bought her a copy of Asa Gray's *How Plants Grow*. It proved to be a frustrating book, too complicated for a child. "I remember an early resolution to write such a book myself as soon as I had achieved sufficient knowledge," she tells us near the beginning of her autobiography.

Shortly before her visit to Scribner's she had read an article by the naturalist John Burroughs in which he said: "One of these days some one will give us a handbook of our wild flowers, by aid of which we shall be able to name those we gather in our walks without the trouble of analyzing them. In this book we shall have a list of all our flowers arranged according to

color, as white flowers, blue flowers, yellow flowers, pink flowers, etc. with place of growth and time of blooming."

When Frances Dana read this, she was at a crossroads in her life, and Burroughs' words helped her to see the path before her. A happy marriage of only a few years had ended recently when her husband, a naval officer much older than she, died in an influenza epidemic in Paris. Grief stricken, still in her twenties, and bound by the Victorian convention of a long period of mourning and retirement from society, she turned to work on the book as a distraction from sorrow.

From childhood Frances Dana had been a lively and vivacious person who liked being among people. She had grown up as a privileged member of New York society in the midst of an active circle of family and friends, both in the city and in the places where they summered and traveled. One of her closest friends was Corrine Roosevelt, the sister of Theodore Roosevelt. Over the years, the energetic Roosevelt clan was very much a part of Fanny Dana's life and she of theirs. The years of her marriage had been spent in travel and social activities in South America and Europe as she accompanied William Starr Dana on his various naval assignments. With her husband's death, her world was suddenly constricted.

Among the friends who provided solace and distraction was Marion Satterlee. She encouraged Fanny to renew her interest in the outdoors, which had begun in her childhood during summer holidays at Newburgh and Lake Mohonk in New York, and Narragansett Pier in Rhode Island. Upon Marion's advice, Fanny enrolled in some courses at Barnard College. One of these was botany, which she described as a "constant source of refreshment."

When she began to work on *How to Know the Wild Flowers*, Frances Dana found it difficult to get people to take her seriously. In describing the role of a woman in her circle, she said, "she was supposed to be at the beck and call of her family and friends, not only in cases of sickness or real need but for a friendly visit or a social occasion.... To secure even a few uninterrupted hours for serious work was almost impossible largely because of a lack of conviction that serious work was involved." At the outset of the project Corrine Roosevelt Robinson, who understood her friend's determination, gave her a quiet room in the Robinson's country home and guarded her from interruption.

Since Frances Parsons seldom gives any dates in her autobiography, it is hard to tell how long she spent writing *How to Know the Wild Flowers*, but it appears to have been no more than a year. She says that most of

the work was done during a summer spent with an aunt in Fairfield, Connecticut. And a busy summer it must have been! "It was not a case of merely sitting down and writing a book," she tells us. "I first had to find my flower, then to make absolutely sure as to its genus and species, its scientific and also its popular name, and then to describe its appearance, color, its haunts, and time of blooming and fruiting as simply and vividly as possible. Usually I began writing in the freshness of the early morning, resisting even the lure of a swim in the nearby Sound. For the first time I learned to "shun delights and live laborious days."

The days were laborious, but the results were gratifying. She tells us to look for Wood Sorrel in the northern woods in June and gives us a picture of its daintiness and a glimpse of a mossy nook with the sunlight filtering through the trees and resting briefly on its red-veined blossoms. She quotes Ruskin on Fra Angelico's use of Wood Sorrel in his paintings, and tells us that in Europe it is called the Hallelujah plant "on account of its flowering between Easter and Whitsuntide, the season when psalms sung in the churches resound in that word." We learn that many consider it the shamrock of ancient Ireland and that St. Patrick is said to have used its triply-divided leaves to prove the possibility of trinity in unity. She goes on to say that the English call Wood Sorrel "Cuckoo Bread" because it blooms when the cry of the cuckoo is first heard. The final paragraph tells us that sorrel comes from the Greek word for sour and that the leaflets "sleep" at night by closing against one another. All of this information is imparted on one page and faces a drawing by Marion Satterlee.

During the same summer that Fanny Dana was laboring on the text of the book, Marion Satterlee was preparing the pen and ink sketches to accompany it. Bowing to Fanny's insistence that she was to be the illustrator, Marion had taken some courses in plant illustration and set to work.

The first printing of *How to Know the Wild Flowers* sold out in five days, and the author began to receive letters of praise from all over the country. A note from Theodore Roosevelt declared, "Your book has really scored the hit of the season; I see and hear about it everywhere." Another from Rudyard Kipling, then residing in Vermont, told her that the book was exactly what he needed to learn more about the wild flowers around his home. Letters from less well-known readers made it clear that Mrs. Dana's innovative book was welcomed by those who wanted to learn about wild flowers, but did not have the time to study botany.

There were also reviews, invitations to speak or to write something, even cartoons and newspaper jokes about the book's popularity. "Marion and I were really too dazed fully to savor it," Fanny writes. "It was pleasant but bewildering."

How to Know the Wild Flowers continued to sell steadily as Scribner's brought out one edition after another. It was followed the next year by *According to Season*, subtitled "Talks about the Flowers in the Order of Their Appearance in the Woods and Fields." *Flowers and Their Children*, a botany book for young people appeared in 1896.

When the prescribed period of mourning for her husband was over, Fanny Dana returned to the world she loved, the world of people. Eventually she remarried. Her second husband was James Russell Parsons, a New York State politician and later a diplomat. And, with the birth of her son, Russell, she had the child she had always wanted. Earlier she had lost two children, one during each marriage, either by late-term miscarriage or shortly after birth. (Victorian reticence in speaking about childbirth makes it impossible to tell from her autobiography.)

The only book Frances Parsons wrote during her second marriage was *How to Know the Ferns*, published in 1899. On summer vacations she had become fascinated with ferns and was unable to find a satisfactory field guide. With this in mind and chafing at the difficulty she and James Parsons were having in getting along on his salary, she informed Scribner's that she would like to do a fern book if the publishers would make a large enough advance payment to put an end to what she found an intolerable financial situation. The book, she writes, "was in no sense 'for the joy of working' but in order to make a definite sum of money for a definite purpose." She goes on from this somewhat grim beginning to explain that joy came unsought as she began the research. Like her first field guide *How to Know the Ferns* is still used and valued by nature lovers today.

After the publication of *How to Know the Ferns* in 1899, there were no more books until her autobiography, *Perchance Some Day*, was printed privately in 1951, a year before her death at the age of 90. The autobiography is a frustrating book for a wild flower lover. Only about twenty of its 360 pages deal with her books. Those who long for her thoughts about the natural world and her books find instead memories of her travels, her social set, and her political activity. She reminisces about the Roosevelt family throughout her life, and sprinkles in references to just about everyone who was significant in American politics in the first half of the twentieth century.

Frances Parsons was a tireless worker for the Republican Party and spoke eloquently throughout the northeast for Republican candidates and programs, except for the period when she, of course, supported Theodore Roosevelt and the Progressive Party. She was also a brave advocate of equal suffrage for women. Most of Frances Parsons' political activity was graciously combined with dinner parties, teas, receptions, and summer sojourns. Reading between the lines in *Perchance Some Day* one sees her, always the lady, gently but firmly moving people toward her political agenda.

When Frances Parsons could participate fully in the life of her social set, she apparently felt no need for writing. Had she not been widowed and constrained by Victorian mourning customs and had she not had a need for money during her second marriage, her intelligent and lively observations of the plant world would have been shared with only a few friends. It is our good fortune that the events of her life conspired to allow us to enjoy her knowledge, wit and enthusiasm.

This article originally appeared in the Winter 1998 Volume X, Number II issue of the North Carolina Wildflower Preservation Society newsletter.

Reprinted from *Notes of the Pennsylvania Native Plant Society*, Vol. 7, No. 1 (2004)

What Is a Naturalized Plant?

A **naturalized** plant is a non-native plant species that has escaped into the wild. It is growing and reproducing outside of cultivation – without human assistance. No matter how well the naturalized plant mingles with the native plants, it is, botanically and ecologically speaking, a non-native plant. Botanists also refer to a naturalized species as an **introduced** species because, whether brought in accidentally or purposefully, it has been introduced to the native flora.

How invasive these naturalized plants are in their new habitats varies widely, depending on the species and the place. Some European annuals and perennials escape to our roadsides, but don't move from these highly disturbed areas. Other naturalized plants move to natural areas, where they threaten native biodiversity, or to agricultural fields, where they significantly impact crops. Florida, for example, now has nearly 1,200 naturalized species; about 10 percent of these (125 species) are considered invasive in natural areas by the Florida Exotic Pest Plant Council.

Reprinted from *Native Plants*, 18:4, 2002, a quarterly publication of the Lady Bird Johnson Wildflower Center

Easy-to-Grow Native Ferns Eastern North America

by Richard Woolger

Ten reasonably abundant ferns native to eastern North America are featured below. If you become a fern buff, you will have to pick up some fern lingo (terminology). A few terms are listed below.

Crosier: a fiddlehead or stem with small uncurling leaves.

Fronde: the entire leaf-stalk with the leaflets (usually compound or twice compound as with palm trees)

Pinnules: leaflets

Sori: little dots on the underside of the leaves (pinnules) which contain spore-producing structures and spores.

Sun/Shade Requirements: All ferns prosper from an hour or two of morning or late afternoon sunshine but several hours of midsummer afternoon sun will be fatal to many types

Ostrich Fern *Matteuccia struthiopteris* (also known as Ostrich Plume Fern)

This large fern is common in eastern North America.

In early spring the unfolding fronds are picked and eaten as "fiddleheads". Ostrich ferns often grow in large colonies in full sun or part shade on the floodplains (created by the melting of ice jams) of local creeks or in woody locales. They are often dug from the wild (a practice NANPS does not condone). They are quite adaptable in gardens and spread quickly. The drawback is that they often look ragged and windblown by mid to late summer. The underground runners can also come up in unwanted places



Male Fern *Dryopteris filix-mas*

This fern is circumpolar in distribution and is reasonably abundant on the Niagara Escarpment. It is not as large as the Ostrich Fern but similar in appearance and a preferred substitute, because it maintains its good looks into the fall. It likes afternoon shade.

Cinnamon Fern *Osmunda cinnamomea*

The Cinnamon is a large fern that prefers moderate shade and tolerates moist to wet soils. Like Male and Ostrich Ferns, it produces its leaves from a single stalk to form a rosette pattern. The name is derived from a spore structure produced in the spring which has a cinnamon colour



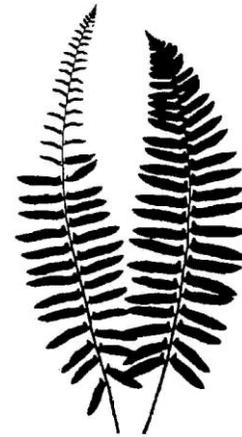


Sensitive Fern *Onoclea sensibilis*

The beautiful Sensitive Fern derives its name from sensitivity to early fall frosts but is no worse than many others in this regard. It is of medium size with light green fronds that are tropical in appearance. It is one of the most water-tolerant of ferns and, if grown in pots or containers, can be partly submerged. It sends up fronds anywhere along its horizontal creeping stems. Sensitive Ferns (and Ostrich Ferns) produce spore (seed) structures in late summer which persist all winter and can be seen poking up through the snow. They are valued by many for use in dried flower arrangements. This fern can be grown in most gardens if given a little extra water during summer dry spells.

Christmas Fern *Polystichum acrostichoides*

This evergreen fern makes a well-behaved garden subject. It is medium in size and has dark green leathery leaves. It seems to have no special requirements other than shade and well-drained soil. As the name implies, the foliage remains green all winter.



Marginal Fern *Dryopteris marginalis*

The name is derived from the pattern of the sori (spore-dot structures) that locate themselves along the outer margin of the underside of the leaf. This moderately common woodland species is of medium size and adapts well to well-shaded garden conditions. The fronds are produced in the typical rosette fern pattern. This fern does not spread.

Lady Fern *Athyrium filix-femina*

The common name Lady Fern (like Male Fern) does not denote the sex of the plant. Rather, it makes reference to this plant's dainty appearance. It is a medium to large fern with finely divided pinnae (foliage). A circumboreal species, the Lady Fern prefers dappled sunlight and humusy soil.





Marsh Fern *Thelypteris palustris*

This small to medium fern, as the name implies, will thrive in wet areas but not with its roots completely underwater. It has a creeping habit. Unlike other ferns it does not produce its fronds in rosettes but along its stems. A close relative, the New York Fern, is very similar in appearance and habit, and can cause ID confusion.

Maidenhair Fern *Adiantum pedatum*

This is considered by many to be the most beautiful of our native ferns. The roots spread moderately and can form large clumps or colonies which can be divided with a spade. The pinnules (leaflets) are small and dainty and are held aloft by very thin, wiry, shiny, black stalks (from which the name is derived). The Maidenhair Fern generally thrives in a shaded well-drained location.



Bulblet Fern *Cystopteris bulbifera*

This fern is small. It is of wide distribution and may be found in large colonies near streams. It seems to like vertical or steeply sloping surfaces where its narrow graceful fronds can be extended without entanglement. The unfurling crosiers (fiddleheads) are bright red in spring. In mid to late summer small bulblets about the size of BB pellets are formed on the underside of the fronds. After falling to the ground they quickly root and produce new plants. This ensures the gardener a good supply of give-away ferns.

Note: illustrations are not to scale

Note: Ferns should not be dug up from the wild. Grow them from spores or purchase them from reputable nurseries.

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Illustrations by Nelson Maher.

Reprinted from a publication of the Education Committee of the North American Native Plant Society.

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Apples in Ohio

David Vermilion, Historian, Dawes Arboretum

How many of us realize that something as commonplace as the apple holds a place in Ohio history? Undeniably, apples were a practical necessity and contributed to the survival of the settlers.

When George Washington advertised for tenants to occupy his landholdings in the Ohio Valley, he asked for no immediate rent payments but required settlers to plant apple and other fruit trees.

General Rufus Putman collected apple tree scions from New England to be planted at Marietta, the first permanent settlement in the Northwest. The Ohio Land Company required that all homesteaders plant 50 apple trees during the first year on their land. Numerous Ohio settlers planted apple orchards from seeds or pips they carried with them or had obtained from residents east of the Appalachian Mountains.

Apples are members of the rose family and are well suited to Ohio as the trees require a change of climate, (apple trees need about 1,200 hours per year below 45°F), to trigger flowering and fruit producing cycles.

Easy to grow, apples provided a good source of complex carbohydrates, vitamins, minerals and dietary fiber. Although pioneer settlers did not know the specifics that made apples a salutary food, one of the most popular proverbs of the 19th century: "an apple a day keeps the doctor away," clearly indicates the widespread belief that eating apples promoted good health.

Found in every county in Ohio, apples proved both practical and versatile. Apples were used in pies, cobblers, dumplings, sauce, fritters, butter, jelly and vinegar. For drinking, settlers made apple juice, cider and spirits. If a well ran dry, apple cider could be consumed. Stored, dried, or preserved, apples would last for months and became a staple in the settlers' winter diet.

The Rambo apple was a good all-purpose apple and prized because it was delicious for winter eating. The Baldwin apple, with its crisp texture and excellent keeping qualities, was prized for fresh eating as well as for cooking. The Summer Pearmain was known for its excellent flavor and was popular for making applesauce. The Golden Russet, a popular cider apple, was good eaten out-of-hand as well as for drying.

Early Ohioans grew an amazing variety of apples and an estimated 1,000 apple varieties were known in this country by 1872. Why were there so many varieties

of apples? Like roses, apples cross-pollinate resulting in seed of one variety, when planted, growing to produce apples different from the parent plant. Thus, Ohioans learned to graft for desired apple varieties.

Names were needed to distinguish the many varieties of apples growing across the country. Some varieties were named after people: Jonathan, Ben Davis, and Mother to name a few. Other apples were named for places, such as the Rome or Rome Beauty variety, named not for the ancient city but after the location of the apple's discovery in Rome Township, Lawrence County, Ohio. Apples were also named for their taste or appearance: Golden Sweet, Sops of Wine, Red Astrachan and the very descriptive Sheepsnose apple. Still, other names were the product of sheer poetic imagination: Maiden Blush (one of the oldest American apples), Fallawater and Seek-No-Further.

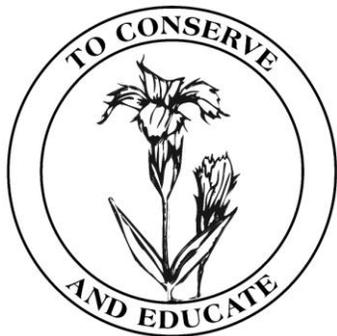
However, with the commercialization of the fruit industry, many of the old varieties were lost. Apples became standardized; varieties that produced well, have a long shelf life, ship well and are uniform in appearance were promoted.

No discussion about apples in Ohio would be complete without mentioning John Chapman (1774-1845), commonly known as Johnny Appleseed. A self-styled nurseryman, Chapman gave and sold apple seeds and saplings to pioneer settlers. Often preceding the settlers, Chapman established orchards throughout present-day Ohio and further west with apple seeds he obtained from cider mills.

Although much of what we know about Chapman is infused with legend, he helped hundreds of settlers establish their own apple orchards. He was also a businessman, and owned and leased land for his nurseries. Chapman tended to his widespread orchards on foot. It is believed that he walked barefoot in worn-out clothes, hundreds of miles each year, for over 40 years until his death at the age of 71.

Today apples are the second most consumed fruit in this country (bananas are first) and are considered not only good eating but as traditional and dependable as Grandma's apple pie. So the next time you bite into an apple or slice a piece of apple pie, enjoy your taste of history.

Reprinted from the Dawes Arboretum *Newsletter*, November 2003



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of
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Volume 23, No. 4

December 2005