

---

---

# MWSHS Student Newsletter

---

---

Spring 2010

---

---

## Spring "Wild-plant Walk" Slated for June 13th!

On Sunday, June 13th, 2010, students from every level of both of our herbal programs will meet in the New Brighton/Arden Hills area of MN to identify, smell, touch, and otherwise experience many of the edible and medicinal wild plants that Spring has to offer! Will *you* be among them? We hope so! To register, see the information immediately below....



MWSHS Director Matthew Alfis  
Examines an Interesting Wild Plant on a  
Recent Wild-plant Walk

---

## Register Now for the Spring "Wild-Plant Walk" on Sunday, June 13th, 2010, 2-5 PM! (\$25)

*See p. 2 for more info; then simply fill out form on p. 7 & fax or mail it to us, or call us to register at 612-781-2038!*

---

## Summary of Assessment-skills Workshop from March 21st

On March 21st, over 20 students of the Midwest School of Herbal Studies convened to hear about patient-directed laboratory testing and to learn and practice the holistic-assessment skills of iris analysis, scleral interpretation, and muscle testing!

"Excellent!" was how one attendee described the workshop, explaining in detail: "It was great to have the hands-on; really made it more real and understandable!"

"I loved it!" exclaimed another attendee. Still another remarked: "Great! Very informative! Can't wait for the next class!"

"Fun and informative!" testified yet another attendee, adding: "It was nice to connect with other students and to get the hands-on!"

Have you, dear student, found opportunity to attend an MWSHS workshop yourself as yet? If not, why not take the occasion to register for the upcoming wild-plant walk on June 13th? (*See regist. form on p 7*)

Should you do so, you'll not find opportunity to learn the valuable skills taught at this workshop, but to meet and visit with other students and MWSHS faculty and staff!

## Student-to-student Message Board Now Featured on Our Website!

Want to find a "study buddy"? Swap a recipe for an herbal salve or soap? Share an herbal healing experience? Ask about another student's experience with a particular herb or herbal formula? Then, simply log on to our website at [www.midwestherbalstudies.com](http://www.midwestherbalstudies.com) and click on "Message Board" on the menu, where you will be directed to our new Student-to-Student Message Board, made available by MWSHS to answer many requests by students for such a feature! (As of this writing, two interesting threads have already been started on the board!)

## Germinating Dormant Perennial Seeds

by Mary Schmidt

Perennial herb seed germination can be very tricky. Nature has devised many methods for making sure that plant species survive drought, flood, fire, severe winters, wet springs, and dry summers by spreading out germination over many years, so that all the seeds don't sprout at the same time and the plants wind up being destroyed by some weather extreme. These natural germination deterrents are what challenge us to get good germination.

To get the best results, we must mimic natural weather conditions. We start by observing just when, in nature, the seeds drop and seedling germinate and emerge. We watch temperature and moisture, look at the amount of sun the plant gets in a natural setting, and observe the kind of soil in which it thrives. With this information, we can encourage the perennial herb seed to break its dormancy.

The soil is always an important consideration. We must use soil that is alive, not sterilized—well drained and fairly moist, but not sodden. I like to use a mix containing sand, peat and compost—combining a bit of good dirt with the natural micorhizza (beneficial fungus) already in the soil. (*Continued on p. 6.*)

---

---

## Inside This Issue

---

- |   |  |
|---|--|
| 2 | <b>Workshop Credit Options--Nationwide!</b>            |
| 3 | <b>Building an Herbal Reference Library: Part Four</b> |
| 4 | <b>Arrowhead: Valuable Plant with a Rich History</b>   |
| 5 | <b>America's Environmental Pioneers</b>                |
| 7 | <b>Workshop Registration Form</b>                      |
-

## WORKSHOP CREDIT OPTIONS

Except where noted, all of the below-listed events qualify as Workshop (Course-Eight) credits toward the 2-year Master-Herbalist program. Each hour of *verified* attendance (per instructor-completed workshop-credit slips as supplied by MWSHS counts toward an equivalent hour of Workshop Category #3 credits (up to the student limit of 20 hours), unless another category is specified or unless one attends a particular workshop at one of these events that is *strictly* in one of these other categories. *MWSHS-sponsored workshops are boxed.*

### Workshops, Conferences, Lectures, & Events in Herbal Studies Across North America

**June 5-7, 2010.** "*Medicines from the Earth Herb Symposium,*" at **Black Mountain, NC.** For further info and/or to register, see the website at [www.botanicalmedicine.org](http://www.botanicalmedicine.org) or call (800) 252-0688.

**June 13, 2010.** "*Wild-plant Walk with MWSHS Director Matthew Alfs*" at **New Brighton/Arden Hills, MN,** 2-5 PM, \$25 per student. For further info and or/to register, see our website at [www.midwestherbalstudies.com](http://www.midwestherbalstudies.com), and click under "Events," or clip and fax or snail-mail the registration form appearing on page 7 of the present Newsletter. Location details and a bring-along list will be sent to registrants 5-12 days before the event.

**July 9-12, 2010.** "*International Herb Association's Educational Conference,*" in **Collinsville, IL.** For further info and/or to register, see the website at [www.iherb.org](http://www.iherb.org).

**July 23-25, 2010.** "*Wild Herb Weekend 2010,*" **Valle Crucis, NC.** For further info and/or to register, see the website at <http://www.ncherbassociation.org/id27.html>

**July 24-25, 2010.** "*NW Herb Fest,*" **Pleasant Hill, OR.** For further info and/or to register, see the website at [www.herbaltransitions.com](http://www.herbaltransitions.com) or call (541) 736-0164 or e-mail [class@herbaltransitions.com](mailto:class@herbaltransitions.com)

**Sept. 17-19, 2010.** "*Traditions in Western Herbalism Conference,*" Ghost Ranch near **Santa Fe, NM.** For further info and/or to register, see the website at [transitionsinwesternherbalism.org](http://transitionsinwesternherbalism.org).

**October 1-3, 2010.** "*The New American Herbalism: Exploring the Roots and Branches of Our Herbal Heritage and Bringing Theory into Practice (21st Annual Symposium of the American Herbalists Guild),*" at **Austin, TX.** See the website at [www.americanherbalistsguild.com](http://www.americanherbalistsguild.com) or call (203) 272-6731.

MWSHS Student Newsletter, Spring 2010. Entire contents copyright © 2010 by Midwest School of Herbal Studies. All rights reserved. Printed in the USA. Any opinions expressed by contributors are those of their own and not necessarily those of the Midwest School of Herbal Studies. Articles on the use of plants for health are for educational purposes only. All readers are encouraged to see their professional health-care provider for illness or injury. Correspondence should be addressed to us by snail-mail at Midwest School of Herbal Studies, P O Box 120096, New Brighton MN 55112 or by email at [MWSHS@aol.com](mailto:MWSHS@aol.com).

## Building an Herbal Reference Library—Part Four

by Matthew Alfs

Picking up from the last issue of *the MWSHS Student Newsletter*, where I reviewed some books I consider worthy for consideration in any herbal enthusiast's home library, I'd like to transition from my coverage of the Physio-medicalists and Eclectics to some of the outstanding books produced by modern-American clinical herbalists.

Let me begin by noting that while many books have been produced by American authors on herbal medicine, very few have been produced by practicing herbalists. Not unexpectedly, then, most of the books produced by non-clinicians have failed to reflect a "real-world" application of herbs as therapeutic tools. As a result, I will ignore books produced by such authors in this series on outstanding modern books on clinical herbal medicine.

### **Modern American Clinical Herbalism**

John Raymond Christopher's *School of Natural Healing (Secrets of a Master Herbalist)* has been a standard American text on clinical herbalism since it was first published in 1976. It is especially appreciated by those inclined to a Thomsonian perspective, although I can't think of any colleagues in herbalism that don't own it and refer to it. (I also own some of the videocassettes of Dr. Christopher's lectures from the 1970s: It is evident therefrom that his style of teaching was most appealing and really captivated his listeners. It was a sad day, indeed, when Dr. Christopher left this world on Feb. 6, 1983.)

California herbalist Michael Tierra is well-known and appreciated by devotees of herbal healing for his useful herb manual, *The Way of Herbs*, first published in 1980, although I much prefer his *Planetary Herbology*, first published in 1988, since it covers some of the more obscure herbs that *The Way of Herbs* ignores.

Western-American naturopath Sharol Tilgner published her *Herbal Medicine from the Heart of the Earth* in 1999. This book of 384pp. provides some useful information and charts for herbal students and neophyte herbalists, especially relative to tincture measurements, formulation, materia medica (with excellent references to scientific studies), etc. It contains an enthusiastic foreword by longtime herbalist and educator Paul Bergner, editor of the finest journal on clinical herbalism produced on American soil, *Medical Herbalism*.

Another naturopath, Francis Brinker, wrote *Formulas for Healthy Living* in 1995 and revised it in

1998. It is a concise and well-written guide on the clinical use of herbs for body-system support.

California herbalist and aromatherapist Kathi Keville wrote *Herbs for Health and Healing*, published in 1996. This book of 374 pp. is a well-written guide to the clinical use of herbs. (An earlier work, *The Illustrated Herb Encyclopedia*, published in 1991, is a well-researched materia medica.) Keville is the director of the American Herb Association and the editor of the *American Herb Association Quarterly Newsletter*. This quarterly newsletter publishes up-to-date herb monographs by Keville that might be considered updates and expansions to those presented in her herb encyclopedia, as well as herbal news items, herbal book reviews, and other useful features.

Midwest herbalist Matthew Wood's books are much appreciated by many herbal enthusiasts, especially his *Book of Herbal Wisdom* (1997) and his *Practice of Traditional Western Herbalism: Basic Doctrine, Energetics, and Classification* (2004). They are, however, tainted with nineteenth-century homeopathic principles and influence, which pulls them out of the herbal mainstream that, by millennia, predates homeopathy (a system that many herbalists consider to be contrary in principle to the time-tested *allopathic* system of plant healing that has been utilized by every national group on the face of the earth since time immemorial).

Probably the most clinically relevant of the books produced by practicing American herbalists, however, are the works of the late, great Michael Moore, who was director of the Southwest School of Botanical Medicine for many years. Among his best are his *Herbal Repertory in Clinical Practice*, 3d ed., 1994 and his *Herbal Materia Medica*, 4th ed., 1994. The detail in these books is remarkable and the coverage of obscure plants—all of whom were used by Moore in his clinical practice—is most commendable and helpful.

That's about it, however, for outstanding books on clinical herbalism in general (note that I have excluded specialized studies, e.g., women's health, veterinary studies, etc.) produced by modern American herbalists. This situation, however, begs the question: Does the scarcity of such texts perhaps point to a lack of depth in American herbalism? I leave that question to others to judge....

Anyway, with this installment, I conclude my series on "Building an Herbal Reference Library," hoping that readers have found it useful in helping to select relevant herbal texts for their own home libraries.

# Arrowhead: Valuable Plant with a Rich History

by Sara Ruiz

Arrowhead is a wetland plant with a long history of use by Native-American tribes. Like many other natural resources used by the Indians, it was valued both as a food and as a medicine. While its significance today is admittedly not as crucial as in days past, it still plays a role in certain populations' diets, remains a valuable food source for animals, and serves some key roles in the natural environment.

This plant belongs to the *Sagittaria* genus of the Alismataceae family. Its common name derives from its pointed leaf shape. (Alternate common names include Indian potato, Tule Potato, swamp Potato, duck Potato, swan Potato, arrowleaf, and frequently by one of its native-American names, *wapato*.) The edible tubers are bluish or white in color and harvested in the late fall.

Arrowhead can be found growing in swamps, streams, ponds and lakes. Different species can be found in geographic areas ranging from Canada throughout North America and into South America, growing at altitudes below 1500 meters.

Some of the Indian tribes that have used arrowhead tubers as a food source (usually roasted or boiled) include the following: Algonquin, Cheyenne, Cocopa, Dakota, Klamath, Lakota, Montana, Ojibwe, Omaha, Pawnee, Pomo and Winnebago. Certain tribes had particular preparation methods: The Ojibwe candied them with maple sugar, the Potawatomi cooked them in a six-foot hole for several days, and the Thompson served them with fish. (Moerman, 1998). Some native tribes considered them to be a food that should be consumed as part of a healthy diet during pregnancy. (Kavasch & Barr, 1999) Arrowhead was also used as a winter food by at least some tribes, including the Menominee and the Meskwaki. Here the tubers would first be boiled, then sliced and strung for storage.

Many tribes used arrowhead as a medicine for a variety of conditions: Ojibwe [Chippewa] used the *latifolia* and *cuneata* species as an infusion to treat indigestion. (Meeker et al., 1993; Moerman, 1998) The Navajo used arrowhead as a treatment for headaches, while the Cherokee used it to bathe a feverish baby and the Potawatomi applied the pounded corms to injuries and sores. (Moerman, 1998) The Iroquois used the plant for several complaints: Dermatological problems, including boils in children; as a laxative for constipation; and as an infusion for rheumatism. (Moerman, 1998) The Algonquin of Quebec made a remedy from arrowhead to treat tuberculosis. (Moerman, 1998) The Thompson Indians used arrowhead as a love charm!

In addition to its use for humans, the Cheyenne also used arrowhead to treat their horses when they had sore mouths or urinary problems. The Copoca used the tubers in gambling. The Potawatomi planted arrowhead to attract geese and ducks. (Moerman, 1998)

Arrowhead's history in the United States was documented in 1882 in the *Dictionary of Popular Names of the Plants which Furnish the Natural and Acquired Wants of Man in all Matters of Domestic and General Economy*, in which John Smith listed it as a food of the native peoples of North America. (Scully, 1970) The Indians traded arrowhead with Lewis and Clark at their stay near the mouth of the Columbia River. (Scully, 1970)

In *Edible Wild Plants of Eastern North America*, Professor Milton Hopkins is quoted as describing arrowhead tubers as being "as toothsome a morsel as any one could hope to enjoy." He goes on to describe how one could make a picnic quite special by having one's guests harvest their own tubers and cook them! (Fernald et al., 1958)

In its more current use, arrowhead is grown in China and used as a starchy food by that nation's people. In the US, it is cultivated in the San Francisco Bay area and is sold there to local Chinese-Americans. (USDA NRCS) Wild-plant foragers harvest it in other areas for personal use. It is an important food source for wildlife, with the seeds or tubers being eaten by several types of ducks, swans, geese, muskrats and porcupines. (USDA NRCS)

In summary, arrowhead has been a source of important dietary starch; a medicine used to treat adults, children, horses, and crops; a way to attract waterfowl; and even a charm and game piece. It is a classic historical example of how people have utilized something from their environment and the diverse roles that it has played.

---

Sara Ruiz was the MWSHS Senior Student Coordinator from 2004-05.

## References

- Fernald, M. L., & Kinsey, A. C. *Edible Wild Plants*. New York: Harper & Brothers; 1958.
- Kavasch, E. B., & Barr, K. *American Indian Healing Arts*. New York: Bantam Books; 1999.
- Meeker, J. E., Elias, J. E., & Heim, J. A. *Plants Used by the Great Lakes Ojibwa*. Odanah, WI: Great Lakes Indian Fish and Wildlife Commission; 1993.
- Moerman, D. *Native American Ethnobotany*. Portland: Timber Press, Inc.; 1998.
- Scully, V. *A Treasury of American Indian Herbs*. New York: Crown Publishers, Inc.; 1970.
- USDA Natural Resource Conservation Service Plant Guide. Broadleaf Arrowhead. Available at [http://plants.usda.gov/plantguide/doc/cs\\_sala2.doc](http://plants.usda.gov/plantguide/doc/cs_sala2.doc)

# America's Environmental Pioneers ... & Our Debt to Them!

by Matthew Alfs

As we've noted in our Master-Herbalist program and in *Student Newsletters* past, conscientious souls like Euell Gibbons and Rachel Carson powerfully sounded the alarm in the 1960s regarding the headlong rush into environmental destruction that was occurring at that time. What is especially sad, however, is that their informed warnings have largely gone unappreciated: In the thirty years since their time, greedy industrialists and technophiles have worked tirelessly to turn our once lovely planet into an ever-growing garbage dump. Then, too, every day, many miles of wild habitat are lost to the bulldozer. Between such pollution, habitat loss, and other thoughtless activities like hunting merely for sport, the natural rate of animal-and-plant extinction has increased by a *thousand-fold* in just the twentieth century alone!

The irony of all of this was highlighted by American astronaut Frank Borman, who, reflecting on his sojourn into outer space, observed: "When you look at our earth from two hundred forty thousand miles away,...you see that our planet is the only thing in the universe that has any color in it.... We share such a beautiful planet...the overwhelming wonderment is why in the world we can't appreciate what we have."

That is an "overwhelming wonderment" indeed! Nevertheless, not all persons have shamelessly promulgated environmental destruction. An 'ecological renaissance' has long been underway, spearheaded by earth-loving individuals, which has proven at least somewhat successful in slowing down the cruel crusade against our wild lands. Carson and Gibbons were part of it, but they were not its progenitors. Before their day, other brave and insightful souls were sounding the alarm—nature lovers and ecologists who served as the inspiration for Gibbons and Carson. Some of these, like Henry Thoreau (whose contemplative work *Walden* has long been a household classic), John Muir (who founded the Sierra Club), and John Burroughs (advisor on conservation to the U.N. and for whom the John Burroughs Medal on conservation was named) are well known to nature lovers. But the story of other important environmental pioneers has seldom been told. I would like to share some key portions of that story now, outlining the invaluable contributions of three important conservationists.

## **John Chapman (1774-1845)**

John Chapman's story begins in northwest Pennsylvania in the year 1797, when he began sowing the

seeds of a large variety of fruits, vegetables, and healing herbs throughout the expanding frontier. Because he had an especial fondness for apple seeds and was once seen paddling down a river with two canoes full of them, he came to be known as "Johnny Appleseed." But, as mentioned, Chapman sowed a large variety of seeds, including those of healing herbs like motherwort, pennyroyal, catnip, mullein, wintergreen, horehound, and even dandelion! A favorite of his, however, was mayweed [dog fennel] (*Anthemis cotula*). Chapman emphasized this particular plant since it had gained the reputation of being a fighter of feverish viral contagions (similar to the reputation garnished by boneset—*Eupatorium perfoliatum*—to which it is related and shares a similar chemical profile, including immunostimulating sesquiterpene lactones).

But what motivated Chapman's passionate trek? As a nurseryman, he planted ahead of the expanding frontier with a mind to business success. But, as a devout theist, he possessed a powerful reverence for life and a missionary zeal to convey that to others. And so, he often appeared on the doorstep of a new settler's home with a sermon in his mouth and healing herbs in his hands.

Feeling a genuine kinship with all creation (he was once seen talking to both plants and animals as he trekked), Johnny wanted to do as much as he possibly could on nature's behalf. He even rescued aged horses that were abandoned and paid any farmers he could find that would take care of them. Once, when he freed a wolf from a cruel trap, he was followed by the grateful animal for quite some time.

His kinship with nature also endeared him to the various Indian tribes of his area. Memoirs from settlers who knew Chapman well convey the thought that many Indians held him in high regard and that his marked zeal in serving others led them to believe that he was imbued by the Great Spirit. These Indians even invited him to sit in on their councils. Johnny also did what he could to mediate disputes between the Indians and settlers living in their area. All in all, he was quite an amazing individual—a true ecological hero!

## **George Marsh (1801-1882)**

A small-town lawyer, farmer, and lumber dealer who became Lincoln's ambassador to Italy, George Marsh saw clearly how, as he related in his 664-pg environmental classic *Man and Nature* (published in 1874 and reprinted

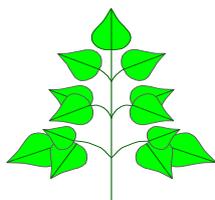
in 1882 as *The Earth Modified by Human Action*), “the ravages committed by man subvert the relations and destroy the balance which nature had established.” He discerningly noted that “the earth is fast becoming an unfit home for its noblest inhabitant and another era of equal human crime and human improvidence...would reduce it to such a condition of impoverished productiveness, of shattered surface, of climactic excess, as to threaten the deprivation, barbarism, and perhaps even extinction of the species.”

He also poignantly observed: “Man is everywhere a disturbing agent. Wherever he plants his foot, the harmonies of nature are turned to discords.” The solution? Marsh insightfully urged that man needs “to become a co-worker with nature in the reconstruction of the damaged fabric which the negligence or the wantonness of former lodgers had rendered untenable.” He stressed the need for *education, enlightenment, and federal legislation* to accomplish these goals. Within 20 years of his death, that last hope of his would become a reality.....

### **Teddy Roosevelt** (1858-1919)

Spurred by a deep friendship with naturalists like Muir and Burroughs and in reflection of joyful years spent in the wilderness as a youth, Teddy Roosevelt, as President during the early 1900s, made it his determination to powerfully bolster the then-namby-pamby National Park System by incorporating *enormous* tracts of wild lands. Among the additions under his presidential term was the Superior National Forest, gracing MWSHS’ home state of Minnesota—some 1.4 million acres in size! Roosevelt also established over 50 bird sanctuaries and game preserves, spread out over a dozen different states. All of this he did with urgency in order to thwart those whom he appropriately called “the despoilers of the earth for their private gain.” He was really the first to wholeheartedly use legislation to conserve wild lands, even coining the term “conservation.”

One marvels at the insight shown by these men, so far ahead of their time with reference to society’s consciousness and ethics! But why aren’t schoolchildren of today taught about the above-outlined exploits of Roosevelt? Why isn’t a name like George Marsh a household one? And why is Johnny Appleseed painted as a kind of kook in school history books? It truly gives one pause to wonder.



### **Germinating Dormant Perennial Seeds** (cont.)

Now let's look at some specific techniques to break the dormancy of perennial seeds. The most common deterrent is cold dependency, meaning that the seeds need a period of cold temperatures, mimicking wintertime, before they will sprout. Here we use cold stratification, which consists of storing the seeds for a length of time—either in the refrigerator or outside during the wintertime. For the former method, mix the seeds in a cup of moist sand or peat and put them in the back of the fridge for four to twelve weeks. For the outdoor method, seed in a weed-free seed bed. Make sure to label, mulch and moisten the soil before the winter sets in. The winter weather will give the seeds a natural cold stratification, encouraging germination to occur, as expected, in the spring. However, rarely will you get a large percentage occurring at one time. Be patient: Sometimes you will get new seedlings each spring for many years running!

Another technique is to use a six-inch-deep flat with a well-drained, but moist soil mix, and place it in a cold greenhouse (or cold-frame it in early spring). The night's cold, alternating with the day's heat, can repeatedly “freeze-thaw” to hasten the release of the dormancy. Also, you can put the deep flat in a protected area under some trees or on the north side of your house. But be sure to mulch well and cover with a screen or glass to keep critters from eating the seeds. Prick the seedlings off as they germinate and transplant to your growing area after the second pair of true leaves appears.

Some varieties require a long germination time and many seasons before they break dormancy. Here we need to: (1) Use a shaded area and sink the flat (or a terra-cotta pot) into the ground; (2) mulch well; (3) cover with a screen; and (4) keep it moist. Time and patience are the most important factors in this scenario. Some examples of plants in this category include: *Eleuthero, Ginseng, Gentian, Blue flag, Uva ursi, Golden seal, Virginia snakeroot, Oregon grape, Hawthorn, Blue cohosh, and Schizandra*

Another problem that may need to be overcome with some seeds involves inhibitors in the seed's fruit. To remove these inhibitors, mash the fruits together and soak them in a glass of water until they ferment. The seeds will usually sink to the bottom of the glass when released from the fruit tissues. By dripping a slow stream of water into the glass, the fermented goo will float out and the seeds will stay in the glass. Listed below are a few of the fruits that benefit from fermentation: *American ginseng, Schizandra, Cayenne, Eleuthero, Ginkgo, Prickly ash, Ashwagandha, Golden seal, Spikenard, Elder, Poke, and Wild Cherry*

Many seeds are light dependent, that is, they need some light in order to germinate. So here, we simply leave

them uncovered or use less than ¼-inch of topsoil. Either way, it is advisable to at least pat the seeds lightly in the soil in order to hold them in place. Use this technique for the following seeds: *Gentian*, *Mullein*, *Angelica*, *St. John's wort*, *Horsemint*, *Meadowsweet*, *Catnip*, *Lobelia*, *Lovage*, *Violet*, *Figwort*, and *Bergamot*.



A few plants have photo-prohibited seeds, which means that sunlight will impede their germination. For these, you must cover with compost or mulch to keep them in the dark. *Lily-of-the-valley* is an example of a plant that needs this sort of treatment.

Some plant seeds have a hard coat that requires a scarifying sort of treatment. If you rub these seeds between two pieces of sandpaper, you can scratch their surface sufficiently so they will imbibe water and begin the germination process. Examples of such are: *False Blue Indigo*, *Lupine*, some *Mallows*, and *Sweet Pea*.

Another problem involves seeds that get too dry and won't sprout. (Over time, of course, most seeds will dry up and not be viable.) With some plants, though, you must make sure to use only seeds that are ultra fresh. *Ginkgo* and *astragalus* are two such plants.

The last topic we will cover entails the fire-dependent seed. Here we need to create a flash fire with pine needles on the flat to mimic a prairie or woodland fire. After preparing the flat and seeding it, we need to top it with dried needles and set them afire. (Caution: Use a wood or ceramic flat and don't allow the flat itself to catch fire). Let the ash lie there and the seed will come up right through it! *Fireweed* (*Epilobium angustifolium*) and *Jack pine* are examples.

All of the aforementioned natural-germination deterrents provide sufficient challenges for even an experienced gardener. But with patience and a willingness to research and experiment, you may find your satisfaction sprouting with each newly emerging cotyledon!

*Mary Schmidt is a Master Gardener and a senior student with MWSHS*

**PRE-REGISTRATION FORM FOR MWSHS WILD-PLANT WALK: \$25 PER STUDENT**

Name:..... Student I.D. #.....  
 Workshop Title .....  
 Date(s)..... Hours.....  
 Total Cost: ..... Payment Enclosed: .....  
 (Check)..... (M.O.) ..... (C.C.) .....  
 If paying by Credit Card, you must supply ALL of the following information in order for us to process.  
Note: Will clear as "Midwest Herbs & Healing."  
 Credit Card Number..... Expir. Date.....  
 CDC Code (last group of 3- or 4 digits in series of numbers on reverse of card *near signature strip*) .....  
 Mailing Address (needed to process credit card) .....  
 Telephone Number (.....) .....

Send completed form with payment to:  
 Midwest School of Herbal Studies, P. O. Box 120096, New Brighton  
 MN 55112



**PRE-REGISTRATION FORM FOR WILD-PLANT WALK: \$25 PER STUDENT**

Name:..... Student I.D. #.....  
 Workshop Title .....  
 Date(s)..... Hours.....  
 Total Cost ..... Payment Enclosed: .....  
 (Check)..... (M.O.) ..... (C.C.) .....  
 If paying by Credit Card, you must supply ALL of the following information in order for us to process.  
Note: Will clear as "Midwest Herbs & Healing."  
 Credit Card Number..... Expir. Date.....  
 CDC Code (last group of 3- or 4 digits in series of numbers on reverse of card *near signature strip*) .....  
 Mailing Address (needed to process credit card) .....  
 Telephone Number (.....) .....

Send completed form with payment to:  
 Midwest School of Herbal Studies, P. O. Box 120096, New Brighton  
 MN 55112

## In Coming Issues

*\* Student Profiles*

*\* Student Articles*

*\* Alumni Profiles*

*\*Book Reviews!*

**Midwest School of Herbal Studies  
P O Box 120096  
New Brighton MN 55112**

**To:**

**First Class Mail**