

The Turk's Cap

THE NEWSLETTER OF THE DELAWARE NATIVE PLANT SOCIETY SPRING 2004

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A CALL FOR ARTICLES

If you would like to write an article for The Turk's Cap, we would love to print it. With like minded individuals as an audience, The Turk's Cap is a great venue for plant or habitat oriented writings.

We'll take just about anything from gardening tips to book reviews to poetry. Of course, it has to be about native plants, or issues related to native plants; just a minor constraint. Your imagination is the real key.

Contact Eric Zuelke (ezuelke@juno.com), or Keith Clancy at 302.674.5187 for more information.

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A BREEZY WARM SUNSHINE ON YOUR FACE WELCOME TO OUR NEWEST MEMBERS

January through March

Clifford Allgor
 Christopher Bason & Chantal Bouchard
 Bobbye Barlow
 Denise Gaal
 Kerry Godwin
 Rob Line
 Jeff Lynch
 Bill & Kate Rohrer
 Elaine Schmerling
 Rhonda Tyndall

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LETTER FROM THE PRESIDENT

Its finally that time of year again – Spring, and I, for one, am happy. The winter was long and dreary and this year I was unable to take a break from it by getting away to a warmer climate. Spring in the Mid-Atlantic never ceases to excite me. The change of seasons from winter to spring in this area of the world can be quite dramatic as plants resume their growth and the woods can be a carpet of wildflowers. I lived in Mississippi and Florida for years, and sure the climate is milder, but there's just nothing like the explosion of spring wildflowers that marks spring in our area. And spring for me arrives earlier than it does on the calendar; i.e., when the skunk cabbage is blooming. In early March I took a short jaunt to a narrow stream,

The DNPS Vision

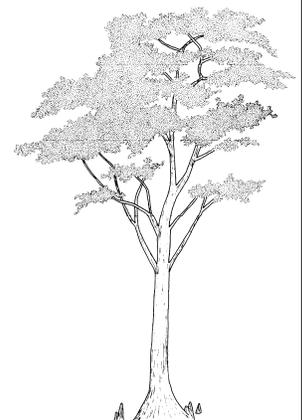
The purpose of the Delaware Native Plant Society (DNPS) is to participate in and encourage the preservation, conservation, restoration, and propagation of Delaware's native plants and plant communities. The Society provides information to government officials, business people, educators, and the general public on the protection, management, and restoration of native plant ecosystems. The DNPS encourages the use of native plants in the landscape by homeowners, businesses, and local and state governments through an on-going distribution of information and knowledge by various means that includes periodic publications, symposia, conferences, workshops, field trips, and a growing statewide membership organized by the DNPS.

HOW CAN I GET INVOLVED?

The Delaware Native Plant Society is open to everyone ranging from the novice gardener to the professional botanist. One of the primary goals of the society is to involve as many individuals as possible.

The DNPS is working on some significant projects at this time. We are in the midst of several reforestation projects, using a "direct-seeding" approach at Prime Hook National Wildlife Refuge, and along Blackbird and Cedar Creeks that took place in October and November, 2003. In addition, help is needed at our native plant nursery at the St. Jones Reserve with the monitoring and watering of plants along with many other nursery activities.

For more information, E-mail us at dnps@delawarenativeplants.org. Or visit our website at www.delawarenativeplants.org. Our website will have all of the past issues of *The Turk's Cap* along with a large section on native plants, as well as links to other environmental and plant related organizations.



LETTER FROM THE EDITOR**LOOK OUT GARDENS, HERE WE COME!**

Winter is being stubborn this year isn't it? I don't know about you, but as winter hangs on, I'm making lots of plans for my native plant gardens in my yard for this spring. Edging, trimming, pruning, mulching and planting are all some of my favorite springtime activities. For those of you who plant vegetable gardens, spring is a time of action also. Buying seeds, getting seedlings started in window nurseries, spreading manure, and tilling all come with the changing temperatures. And if any gardeners out there are interested in biological pest control, then you may glean some useful information from the Plant-Animal Highlight. And if anyone out there has an interest in medicinal plants, or even grows medicinal plants, then this theme issue of the Turk's Cap may be of interest. We're focusing on medicinal plants this time and our Feature Article was written by a new member to the Society who has a professional interest in medicinals. I hope you like her article. Our Native Plant Highlight is about a great little plant that can be used medicinally.

We have a lot of exciting things planned for our nursery this year, and some great field trips planned, as well as a lot of work on our reforestation sites. I hope everyone can make it out to some of these events.

Have a fun spring, and take some time away from work and go swing on a swing set, or fly a kite, or just lay on the grass and enjoy the sun on your face! 🌸

oooo Eric Zuelke, Editor

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PLANT-ANIMAL HIGHLIGHT**BIOLOGICAL PEST CONTROL IN THE GARDEN**

Sometimes when you put plants and animals together you get one big happy family. One of the best places for humans to glean happy rewards from this situation is in the garden. And the best way to reach this happy medium is to introduce plants into the garden that either deter pests through chemical means and/or attract beneficial insects at the same time.

Beneficial insectary planting refers to intentionally introducing certain plants into agricultural situations to increase pollen, nectar, and reproductive resources that stimulate the influx of populations of the natural enemies of insect pests. Natural enemies of insect pests depend on pollen, nectar, and other specific plant characteristics for their reproductive success and longevity. Because of agricultural practices like frequent cultivation and herbicide applications, many farm fields and gardens have few if any flowering plants present, limiting the possibilities for biological control. Several studies have demonstrated the successful establishment of flowering plants in or around farm fields to attract natural enemies and enhance biological control of crop pests; however, many beneficial insects are quite selective and show preferences for certain plant species. Some of the beneficial insects that can be attracted with certain plants are: ladybug, honey bee, syrphid (or hover) fly, ground beetle, dragonfly, and parasitic wasp.

The following is a list of some of these beneficial plants:

- Basil (non-native) planted alongside tomato plants helps con-

trol tomato hornworms.

- Thyme (non-native) planted with cabbage helps control flea beetles, cabbage worm and white cabbage butterflies.
- Mint (non-native, but native alternative could be *Mentha canadensis* [Canadian mint]) repels mosquitoes and produces an odor that aphids and cabbage pests dislike.
- Garlic (non-native, but native alternative could be *Alium canadense* [meadow onion]) planted close to roses can protect bushes from black spot, a fungus disease; can be grown in rings around a crop to repel aphids; spray garlic tea on plants to eliminate fungus and mildew. It also deters codling moths, Japanese beetles, root maggots, snails, and carrot root fly.
- Bee Balm (non-native, but native alternative could be *Monarda clinopodia* [basil bee-balm]) attracts bees to a garden. It is another plant that you can grow with your tomatoes.
- Catnip (non-native) repels just about everything! Use it to keep away flea beetles, aphids, Japanese beetles, squash bugs, ants, and weevils.
- Chives (non-native) repel Japanese beetles and carrot rust flies. It has also been said that chives will help prevent scab when planted among apple trees.
- Chrysanthemums (non-native) can be made into an all-natural pesticide (pyrethrum) and can help control things like roaches, ticks, silverfish, lice, fleas, bedbugs, and ants. In the garden white flowering chrysanthemums are said to drive away Japanese beetles and kills root nematodes.
- Dill (non-native) is best planted with cucumbers and onions, and with lettuce during the cool season. Dill attracts hoverflies and predatory wasps, and its foliage is used as food by swallowtail butterfly caterpillars. Tomato hornworms are also attracted to dill, so if you plant it at a distance, you can help draw these destructive insects away from your tomatoes. Dill repels aphids and spider mites. Sprinkle dill leaves on squash plant to repel squash bugs.
- Lavender (non-native) Lavender is a favorite among many beneficial insects and also repels fleas and moths.
- Marigolds (non-native, but a native alternative could be *Bidens laevis* [smooth bur-marigold]) are probably the most well known plant for repelling insects. French marigolds repel whiteflies and kill nematodes. Mexican marigolds are said to offend a host of destructive insects and wild rabbits as well. If you choose marigolds for your garden they must be scented to work as a repellent. And while this plant drives away many bad bugs, it also attracts spider mites and snails.
- Nasturtiums (non-native) planted with tomatoes and cucumbers is a way to fight off woolly aphids, whiteflies, squash bugs, and cucumber beetles. The flowers, especially the yellow blooming varieties, act as a trap for aphids.
- Sunflowers (native species) draw aphids away from other plants. Ants colonize into them without hurting these hardy plants.

Although this article does include many non-native species (I tried to only list non-invasive species) the intent of this article is to show that there is an alternative to using pesticides in the garden. I also challenge readers to come up with additional natives that would be excellent alternatives to those listed above. 🌸

oooo Eric Zuelke, Editor

Continued on page 3

LETTER FROM THE PRESIDENT

Continued from page 1

Puncheon Run, on the edge of Dover, to look for and photograph the unusual skunk cabbage (in milder winters this species may be blooming in early February). I found dozen of plants in flower, many just slightly past anthesis, but plenty that were right at their peak. The skunk cabbage is related to the familiar Jack-in-the-pulpit, arrow arum, and golden club in our area, as well as those familiar houseplants such as anthuriums, dieffenbachias, and philodendrons. All are characterized by tissues with raphides (bundles of needle-like calcium oxalate crystals), that can cause painful injury to the throat and mouth to any unwary consumer. In fact, the common name for the houseplant *Dieffenbachia* is dumb-cane, a name that appropriately describes what may happen to one's ability to talk if consuming this plant. But, I digress, I really wanted to say a word or two about the skunk cabbage's inflorescence (which may, erroneously, be referred to as its flower). The skunk cabbage, as typical of all members of the family Araceae, produces an inflorescence composed of many small flowers packed onto a cylindrical, fleshy axis called a spadix. This spadix is subtended by a large, leaf-like or petaloid bract called a spathe, and in the skunk cabbage this spathe is incurved at the apex, fleshy and foliaceous, partly subterranean, and may be green, purplish, spotted or striped or both. The individual flowers are very small and are, in the case of the skunk cabbage, bisexual (i.e., both male and female parts in the same flower), possess 4 so-called tepals (as there is no distinction between sepal and petal) and 4 stamens, and a uni-ovulate ovary embedded in the fleshy spadix. The inflorescences of the skunk cabbage, if developed when there is a covering of snow, produces enough heat to thaw the frozen earth and melt the snow in a circle around the inflorescence. The plants give off a fetid odor that attracts insects, especially flies, critical to its successful pollination. I hope you will be able to get out and observe this phenomenon (next year). When I finish with this letter I am off to look for and photograph the rare and attractive dwarf trillium (*Trillium pusillum* var. *virginianum*) and sweet pinesap (*Monotropsis odorata*), both of which should be in bloom at this time. So, therefore, since its getting late in the morning and I want to get in the woods I will conclude this letter shortly.

But before I go, I just want to invite everyone to come out and participate in our upcoming events. The next Society sponsored event is our field trip, on April 24, to the Mt. Cuba Center for the Study of the Piedmont Flora. The center, located off Barley Mill Road and along the Red Clay Creek, in northern Delaware (see elsewhere in this newsletter for details) is a spectacular place and the spring flora should be near its peak. And then on May 22 we will have a field trip, also along the Red Clay Creek, as part of our annual meeting. But if you are unable to attend these outings I hope you will be able to get out on your own to enjoy the beauty of the spring wildflower display.

I will also let everyone know when we will be out at our native plant nursery and at our 4 reforestation sites this spring and summer; we will definitely need your help with these projects.

Best wishes for a floriferously colorful spring, and one full of discovery.

Best wishes,

NATURAL QUOTES

"I go to nature to be soothed and healed, and to have my senses put in order."

John Burroughs

FEATURE ARTICLE

NATIVE MEDICINES

When I reflect on this important movement toward a preservation of native plants, it is important to understand a bit about how this lack of native plants came about. One aspect of this involves medicines. Many European species not native to the New World were brought to this country due to their medical necessity for the migrating peoples. Moving to a new land, they were sure to bring along familiar remedies and crucial plants for their health.

Our modern world has moved away from herbal medicine. However, today, there is more and more general acceptance of nature's healing gifts. My profession is the only doctorate level training available in this country which focuses on building expertise in natural medicines. In my herbal practice, it is of foremost importance that we cultivate and wildcraft herbs in an environmentally responsible manner. Many remedies that I use on an everyday basis are native to the Delmarva Peninsula. As people learned from Natives and from experimentation and study, native plants slowly but surely were added to our common medicines. And so let's start down an adventure. I invite us to embrace our desire to re-populate the region with native plants. Let us also remind ourselves that we live in relationship to these plants. By finding a wholesome use for the plants, we do more to anchor their presence in our world. A plant's medicinal use is a viable way to create an avenue for preservation, respect and conservation of our native plant heritage. Below I will introduce you to the common uses of some of the native plants. It goes without saying that this does not constitute medical advice, and before you begin to use these plants for medicinal purposes, please seek the care of a trained herbalist or Naturopathic Physician for specific herbal recommendations.

Symplocarpus foetidus (skunk cabbage)

Commonly known for its attention getting aroma, skunk cabbage is an extremely useful medicine. I use it mostly in my asthma patients in combination with other herbs used for lung illnesses. Its specific indication is for tense or spasmodic conditions in the lung. It may be used for asthma, bronchitis, and whooping cough. Generally, the root and rhizome of the plant are collected in the fall and made into tincture or tea. Specific actions of the herb are anti-spasmodic, expectorant, and diaphoretic.

Ulmus rubra (Slippery elm)

This by far is one of my favorite gastrointestinal remedies. I find it helpful in many situations, and this includes

NATURAL COMMUNITY HIGHLIGHT**Piedmont floodplain forest**

Along the larger streams of the Delaware Piedmont, particularly White Clay Creek and Brandywine Creek, is a rich and diverse community that blurs the line between wetland and upland. These areas—floodplains—are flat terraces that are found adjacent to the river and just above the typical water level of the stream. However, during periods of high rainfall or snowmelt, these areas become inundated by the rising waters of the river. This periodic flooding has two important functions in the development of the floodplain community: it creates very rich, loamy soils through the deposition of alluvial sediments, and it functions as a frequent disturbance of natural community processes. While these soils provide habitat for some of our most diverse plant communities, this combination of nutrient-rich soils and frequent disturbance also creates ideal conditions for the establishment of invasive non-native species. Unfortunately, much of Delaware's floodplain habitats have become overrun with these invasive non-natives, and nowhere in the state are the threats posed by non-natives more apparent than our floodplain forests.

Description

The canopy of Piedmont floodplain forests is typically dominated by *Platanus occidentalis* (sycamore) and *Fraxinus pennsylvanica* (green ash), with *Acer negundo* (box elder) predominating in the subcanopy. Other trees frequently encountered include *Juglans nigra* (black walnut), *Betula nigra* (river birch), *Acer saccharinum* (silver maple), *Liriodendron tulipifera* (tulip tree), *Acer rubrum* (red maple), and *Cornus florida* (flowering dogwood). *Lindera benzoin* (spicebush) is typically abundant in the shrub layer. The herb layer can be quite diverse, with common species including *Podophyllum peltatum* (mayapple), *Hydrophyllum virginianum* (Virginia waterleaf), *Arisaema triphyllosum* (jack-in-the-pulpit), *Polemonium reptans* (Greek valerian), *Symplocarpus foetidus* (skunk cabbage), *Boehmeria cylindrica* (false nettle), *Impatiens capensis* (orange jewelweed), and *Viola* spp. (violets). One of our most spectacular wildflowers, *Mertensia virginica* (Virginia bluebells), is essentially restricted to these Piedmont floodplains. However, the herb layer of this community is prone to invasion by non-native species, which may reduce the diversity of native species. Common invasive non-natives include *Rosa multiflora* (multiflora rose), *Microstegium vimineum* (Japanese stiltgrass), *Ranunculus ficaria* (lesser celandine), *Lonicera japonica* (Japanese honeysuckle), *Celastrus orbiculatus* (Oriental bittersweet), and *Alliaria petiolata* (garlic mustard). *Toxicodendron radicans* (poison ivy) is a common native vine that frequently climbs into the canopy.

Distribution

As previously noted, this community can be found in areas along White Clay Creek, but it is most well-developed along the Brandywine, which has the highest quality examples in the state. Although there are floodplain forests along streams on the Coastal Plain, they often have different dominant species, and are generally not as species rich. 🌿

oooo Peter Bowman, DE Natural Heritage Program Ecologist

NATIVE PLANT HIGHLIGHT**VANILLA GRASS**

In keeping with the “herbal” theme of this issue of the newsletter, I would like to discuss a grass that is rare in Delaware and is known as “vanilla grass,” or “holy grass.” The scientific name of this grass is *Hierochloa odorata* and it is known from only a single population in the Inland Bay's region of Sussex County. It was first discovered in Delaware in 1994 and at the time was a new addition to the flora, as well as the Delmarva Peninsula. The native distribution of vanilla grass in the northeastern U.S. is from Maine, south to northern Pennsylvania, and southern New Jersey. As the species name of the plant implies, *odorata*, vanilla grass, when crushed or bruised has a strong and very sweet odor of vanilla. Vanilla grass was, and is still used by Native Americans as a perfume, and in weaving baskets and incense ropes. Native Americans also consider vanilla grass to be a holy grass and is used in ceremonies as an incense to purify the soul, prevent evil, and invoke positive powers for peace. It is interesting to note that archeological studies have been conducted on the site where vanilla grass grows in Sussex County and many ancient Native American artifacts have been discovered. It is estimated that Native Americans utilized this area as early as 8000 to 9000 years ago and continued up until the time of European contact (1600s to 1700s). In addition, a small burial ground has also been discovered at this site. The question arises, is the presence of vanilla grass in Delaware a result of seed being dispersed by Native Americans? This question is difficult to determine, but intriguing when one considers the phenomenon of plant migration and establishment. 🌿

oooo William McAvoy, DNPS Vice-President

EVENT HIGHLIGHT**ALL TAXA FIELD TRIP TO FAIR HILL NRA, CECIL, CO., MD**

Fourteen people attended this trip on 20 March 2004. It was a beautiful introduction to Spring which officially began on the day of our trip. We saw dozens of species of plants in the natural areas of this Piedmont forest, including the diminutive vegetative sprigs of some spring ephemerals that hadn't quite gotten big enough to flower yet. William McAvoy (our Vice-president) and Jack Holt co-led the trip and with the help of Janet Ebert, everyone involved was treated to a stupendous show of adept botanizing. If you've never experienced the expertise of Jack and Janet, then you should indulge yourself by coming to the Annual Meeting where we will be challenging them with a slide show quiz. Anyhow, some of the highlights of this trip were *Trichophorum planifolium* (bashful bulrush) which is state rare in MD and DE, a *Dryopteris* hybrid (*carthusiana* x *crinata*) which is a hybrid between a spinulose wood fern and a crested wood fern, *Hedwigia ciliata*, which is a rare moss that only occurs on rocks, and some very nice orchids. We also had a relaxing lunch break on the bank of the Elk River. And of course, anytime you've got Eric and Rick McCorkle together, you have to include animals! So, we also found some very nice red-backed salamanders, wood frogs with numerous egg masses in a pond, and we identified some of the common winter resident birds. 🌿

THOUGHTS FROM THE EDGE OF THE GARDEN
DNPS NURSERY UPDATE

After our most successful plant sale yet last November, the nursery has been resting quietly in a dormant slumber. But it's time wake it up, and we've got some very exciting plans for this nursery season. Keith and I have already replaced the old 4 mil plastic on our greenhouse with new, stronger 6 mil plastic which we're hoping will weather a little better. We also made some improvements to the structural integrity of the greenhouse as a result of some lessons learned from hurricane Isabelle last September. We also are going to be adding a new bed to the nursery. This one will be an aquatic bed! We are in the process of buying an 8.5 foot x 4.5 foot, 100 Gallon pre-formed pond from MacCourt Industries (through Lowe's). We have seeds of numerous aquatic and semi-aquatic native plants collected last Autumn all ready to germinate and grow for the next native plant sale.

DNPS ELECTRONIC MAIL POLICY AND SPAM

The DE Native Plant Society uses e-mail as a way to keep all of our members informed of short-term Society news and events that can't be covered in our quarterly newsletters. We are constantly doing quality control on our membership database, especially the e-mail addresses, and we've been noticing recently that a handful of DNPS members have e-mail service providers that are blocking emails sent to them by DNPS. The advent of Internet spam has prompted almost all Internet Service Providers to add some type of spam filtering system to their software. Some of these systems comprise of blocking everything except for what is on a list that you manually add "safe", or "known" addresses to, some route all unknown addresses to a "spam folder" that you can browse in separately from your inbox, while other systems allow you to add a wanted addresses to an address book with a few mouse clicks, still other allow you to block unwanted addresses by adding them to a "blocked list", or using "mail assistants" to organize messages. Whatever system you have in your software, we just wanted to make sure that everyone who wants to receive e-mails from us can get them, so please check your spam filter settings and add dnps@delawarenativeplants.org to your "safe list." If you haven't been receiving e-mails from us and want to make sure that you do, please contact us and we can make sure we have your correct address and we can make sure that you are able to receive messages through your filtering mechanism. Conversely, if you gave us your e-mail address when you first joined and do not want to continue receiving our e-mail updates, inform Eric at ezuelke@juno.com and I will remove your address from your membership database entry.

CALL FOR NOMINATIONS FOR OFFICERS

This year we have three officers whose terms are expiring. Therefore, we are looking for members that might be interested in serving as President, Vice-president, or Secretary. If you are interested in taking a more active role in the society and would be interested in serving a two-year term, or would like information about the duties of each office please contact us at dnps@delawarenativeplants.org, or 302.674.5187. We will be having elections at the annual meeting in May.

UPCOMING EVENT

2004 Annual Meeting

**DELAWARE NATIVE PLANT SOCIETY'S
 6TH ANNUAL MEETING:**

**THE GEOLOGY AND FLORA OF
 DELAWARE'S PIEDMONT**

Where: Ashland Nature Center, located off Barley Mill Road at the intersection of Brackenville Road. From Rt. 41 in Hockessin take Brackenville Road north to DNS approximately 2 miles, look for entrance to nature center on left side of road just before Barley Mill Road. You can also find directions at www.delawarenaturesociety.com.

When: Saturday, 22 May 2004, 10 AM to 4 PM

Schedule:

10:00: Opening remarks

10:15-11:00: Lecture from our keynote speaker Sandy Schenk, Director, Earth Science Information Center, DE Geological Society, "Delaware Piedmont Geology"

11:15 to noon: Piedmont plant slide show challenge with Janet Ebert and Jack Holt. A slide presentation whereby Jack and Janet will be shown a series of plants that they will have to identify and then discuss what they know about each species

Noon to 1 PM: Lunch

1 PM to 1:30: Society Updates

1:30 to 4:00: Field trip, led by Jack Holt and Janet Ebert, to the diverse habitats along Red Clay Creek.

For more information and to register: email us at dnps@delawarenativeplants.org, or call us at 302.674.5187.



Keith Clancy

DNPS members on the field trip to Fair Hill Nat. Resource Area

Continued on page 6

FEATURE ARTICLE

Continued from page 3

the GI tract, respiratory concerns, and urinary tract symptoms. *Ulmus* is a small tree, the inner bark is the medicinal part. My favorite form of use is simply the powdered inner bark which can be found easily at most good health food stores in the bulk spice section. I consider it a "must have" for the natural medicine cabinet at home. It is very soothing to any inflamed mucous membrane. Especially useful for gastritis, colitis, diarrhea, heartburn. It is well-tolerated in situations of gastric upset and nausea/vomiting. Through a reflex action, it also is a respiratory soothing expectorant. *Ulmus* is extremely nutritious as well. Elderly persons, adults and infants with inflammation of the tract can benefit from what we call "Slippery Elm Gruel." (1 tsp powdered *Ulmus* in a small amount of cold water to make a paste, add hot water and cinnamon or sugar to taste. Best liked if taken as a bolus on tongue rather than chew the paste. Many people attest to the weird texture, but reliable effectiveness of this gruel) *Ulmus* works best if dosed frequently. It soothes and astringes the inflamed and hypersecreting intestinal mucosa.

Sambucus canadensis (Elderberry)

What medicine we are gifted by the Elderberry! Different uses for different parts of the plant, so respect is needed to understand this medicine fully.

Flowers: The *Sambucus* flowers are excellent diaphoretics, or inducers of sweating off a fever. They are excellent remedies for treatment of colds, fever, headache, and nausea. *Sambucus* is useful in someone who has a lot of phlegm which needs to be softened and expectorated. Also, *Sambucus* will work well in someone who has a dry, irritated cough without congestion. The flowers are also an antispasmodic, so cough and asthma are indications. The flowers contain tannins which astringe (dry out) the mucosa of the sinuses, thus relieving congestion. *Sambucus* will also cause constriction of the blood vessels supplying the sinuses and therefore should be used with caution over the long-term. Discontinue use if a sinus headache develops or worsens.

Berries: Raw fresh berries are emetic (vomit-inducing), beware. But dried cooked berries are not emetic. The berries contain anthocyanidins (a potent antioxidant family). These function as antioxidants in the collagen fibers (connective tissue) and prevent the enzymatic cleavage of collagen during inflammation. Thus the release and synthesis of compounds that cause inflammation (like histamine, prostaglandins, and leukotrienes) are prevented. The berries are useful anti-inflammatories by also improving collagen biosynthesis, not simply by blocking inflammation. They are useful for joint diseases, allergic conditions (such as sinusitis, and asthma), colds and coughs, diarrhea. They are also high in Vitamin C content, which makes their beneficial effects on collagen and mast cells even more potent.

Leaves, root, and bark: These are toxic, so internal use is not recommended. However, external application of the cooked leaves, root and bark are useful for hemorrhoids and labial tears, bites, wounds, stings, sunburn, boils, abscesses, sore joints, bruises, sprains, ulcerations, splinters (draws them out)

and weeping eczema. They are vulnerary (wound healing) and astringent.

These three potential plants are introduced for you to create more habitat for native species. You could grow them and provide some wonderful home remedies for yourself and family. Please read more about the plants once you invite them onto your property to really grow in your ability to respect the medicines they contain. In this way, we can all return native plants to Delaware, one back yard at a time!

Dr. Kim Furtado, N.D., is a Naturopathic Physician on the allied health staff at Beebe Medical Center. For more information or an appointment, call 302.945.2107. To find out more about the local holistic community, visit

www.delmarvacommunitywellnet.net.

RESOURCES AND REVIEWS

FLORA OF DELAWARE AND THE EASTERN SHORE, BY ROBERT TATNALL

This is the first comprehensive survey of Delaware plants and was published in 1946 by The Society of Natural History of Delaware. Tatnall covers plants from purple love-grass, and dog fennel, to bald cypress. *Flora of Delaware* is invaluable because it is an annotated list of the historical locations of plants found on the Eastern Shore and includes collector's records. One of the collectors is Albert Commons (see our last newsletter), responsible for assembling the most extensive collection of Delaware plants.

The intent of William McAvoy and Karen Bennett's *The Flora of Delaware; an annotated checklist* 2001, "is to supplement Tatnall's work and to provide a systematic approach to delivering taxonomic, status, habitat and physiographic distribution information on each species." While Tatnall documented the loss of the fringed gentian, this checklist also documents the disappearance of species such as two of our three native roses listed in Tatnall. *Rosa carolina* (Carolina rose) was listed in Tatnall as frequent in swampy places and in sandy pinelands, Piedmont and the Coastal Plain. *Rosa virginiana* (Virginia rose) was listed as rare on the Coastal Plain but one specimen was collected in Rehoboth by Commons in 1895. The checklist lists these two species as "historical" as they have not been seen in Delaware for at least 15 years. "Disappearing Diversity" by William McAvoy [*Outdoor Delaware* Spring/Summer 2002] gives an overview of the problems with Delaware plants today.

Tatnall and McAvoy/Bennett publications are available at public libraries or can be purchased. *Flora of Delaware and the Eastern Shore* by Tatnall: \$35.00 plus \$5.00 for shipping/handling and is available from: Claude E. Phillips Herbarium at Delaware State Univ. Call to order: 302.857.6452 M-F, 8:30 - 4:30. *The Flora of Delaware* by McAvoy/Bennett: \$17.00 includes shipping and is available from: Delaware Natural Heritage Program, 4876 Haypoint Landing Rd., Smyrna, DE 19977, 302.653.2880.

oooo Gwendolyn Elliott, DNPS Member

UPCOMING EVENTS

SATURDAY, 17 APRIL 2004 – EARTH DAY FESTIVAL AT KILLENS POND STATE PARK FROM 10 AM TO 3 PM. SPONSORED BY DSWA, THIS EVENT FEATURES FUN EVENTS FOR THE ENTIRE FAMILY INCLUDING THE POPULAR “ECO-TRAIL”. CONTACT WENDY PIZZADILI AT 302.739.5361 OR ON THE WEB AT WWW.DSWA.COM FOR MORE INFORMATION. THE DNPS WILL HAVE THEIR DISPLAY SET-UP AT THIS EVENT.

SATURDAY, 17 APRIL 2004 – CHRISTINA RIVER CLEAN-UP FROM 8 AM TO 12 NOON. CONTACT 302.328.9436 TO REGISTER.

TUESDAY, 20 APRIL AND WEDNESDAY, 21 APRIL 2004 – DELAWARE WETLANDS AND STREAM RESTORATION CONFERENCE AT THE DOVER SHERATON HOTEL. CONTACT MARK BIDDLE AT 302.739.4590 FOR MORE INFORMATION.

WEDNESDAY, 21 APRIL 2004 – FIFTH ANNUAL MEETING OF THE DE INVASIVE SPECIES COUNCIL FROM 8:30 AM TO 3 PM. HOSTED BY THE CLAUDE E. PHILLIPS HERBARIUM AT DE STATE UNIVERSITY. MANY PRESENTERS AND A TOUR OF THE HERBARIUM ARE SOME OF THE EVENTS. CONTACT CATHERINE MARTIN AT 302.653.2887, OR CATHERINE.MARTIN@STATE.DE BY 16 APRIL 2004 FOR MORE INFORMATION.

SATURDAY, 24 APRIL 2004 – DNPS FIELD TRIP WITH A TOUR OF THE GARDENS AND ADJACENT NATURAL AREAS AT THE MT. CUBA CENTER FOR THE STUDY OF THE PIEDMONT FLORA, NEAR MT. CUBA, DE, 9:30 AM TO 2:00 PM. FOR DIRECTIONS AND TO SIGN-UP FOR THIS TRIP EMAIL US AT DNPS@DELAWARENATIVEPLANTS.ORG, OR CONTACT KEITH CLANCY AT 302.674.5187.

SATURDAY, 24 APRIL 2004 – AG DAY AT THE UNIVERSITY OF DELAWARE, AND THE BOTANIC GARDEN PLANT SALE FROM 10 AM TO 4 PM. ON THE WEB AT [HTTP://BLUEHEN.AGS.UDEL.EDU/UDBG/PLANT_SALE_2004/](http://BLUEHEN.AGS.UDEL.EDU/UDBG/PLANT_SALE_2004/) FOR MORE INFORMATION.

SATURDAY, 01 MAY AND SUNDAY, 02 MAY 2004 – DELAWARE NATURE SOCIETY, ANNUAL NATIVE PLANT SALE AT THE COVERDALE FARM IN GREENVILLE, DE. OVER 10,000 PLANTS OF OVER 240 SPECIES. CALL 302.239.2334, OR ON THE WEB AT WWW.DELAWARENATURESOCIETY.ORG FOR MORE INFORMATION.

SATURDAY, 08 MAY 2004 – ADKINS ARBORETUM, ANNUAL NATIVE PLANT SALE FROM 9 AM TO 1 PM. LARGE VARIETY OF NATIVE TREES, SHRUBS, AND HERBACEOUS PLANTS. CALL 410.634.2847, OR ON THE WEB AT WWW.ADKINSARORETUM.ORG FOR MORE INFORMATION.

SATURDAY, 14-16 MAY 2004 – WINTERGREEN NATURE FOUNDATION, 21ST ANNUAL SPRING WILDFLOWER SYMPOSIUM. EVENTS WILL FEATURE NATIONALLY KNOWN SPEAKERS AND WILDFLOWER GARDENING AND NATIVE LANDSCAPING IDEAS FOR BOTH MOUNTAIN AND VALLEY HABITATS. CONTACT EMILY THAYER AT 434.325.7453, OR EMAIL AT DEVELOPMENT@TWNF.ORG FOR MORE INFORMATION.

3-5 JUNE 2004 – NATIVE PLANT CONFERENCE AT MILLERSVILLE UNIVERSITY. CALL 310.869.9756, OR ON THE WEB AT WWW.MILLERSVILLENATIVEPLANTS.ORG FOR MORE INFORMATION.

DNPS BI-MONTHLY MEETINGS FOR 2004 – ARE CURRENTLY SCHEDULED THE 3RD TUESDAY OF EVERY OTHER MONTH. OUR NEXT MEETINGS WILL BE: 20 JULY, 21 SEPTEMBER, 16 NOVEMBER. MEETINGS WILL TAKE PLACE (UNLESS OTHERWISE NOTIFIED) AT 7 PM AT THE ST. JONES RESERVE, KITTS HUMMOCK RD. ABOUT 3/4 MILE EAST OF THE RT. 9/113/KITTS HUMMOCK ROAD INTERCHANGE JUST AT THE SOUTHERN EDGE OF DOVER AIR FORCE BASE. WE PLAN TO HAVE GUEST SPEAKERS AT EACH MEETING (SPEAKERS AND THEIR TOPICS WILL BE ANNOUNCED AT LATER DATES). CHECK OUR WEBSITE FOR ADDITIONAL DETAILS OR EMAIL US AT DNPS@DELAWARENATIVEPLANTS.ORG.

Membership Application

DELAWARE NATIVE PLANT SOCIETY

Member Information

Name:

Business Name or Organization:

Address:

City and Zip Code:

Telephone (home/work):

E-mail address:

- Full-time Student \$10.00
- Individual \$15.00
- Family or Household \$18.00
- Contributing \$50.00
- Business \$100.00
- Lifetime \$500.00
- Donations are also welcome \$ _____

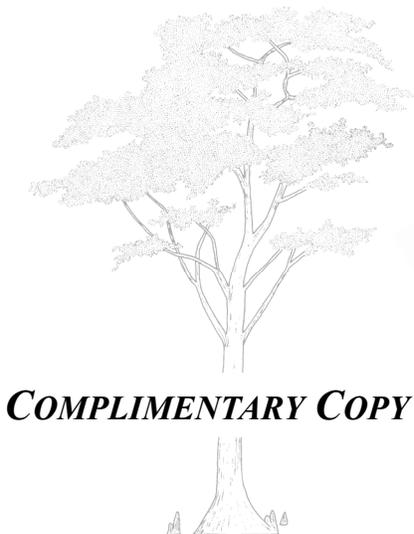
Membership benefits include:

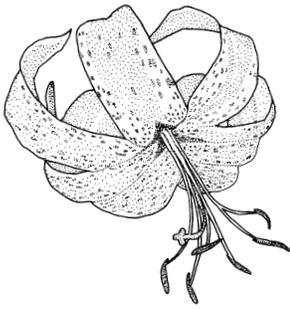
- * The DNPS quarterly newsletter, *The Turk's Cap*
- * Native plant gardening and landscaping information
- * Speakers, field trips, native plant nursery and sales

Total Amount Enclosed: \$

**Make check payable to:
DE Native Plant Society
P.O. Box 369, Dover, DE 19903**

**DELAWARE NATIVE PLANT SOCIETY
P.O. BOX 369
DOVER, DELAWARE 19903**





The Turk's Cap

THE NEWSLETTER OF THE DELAWARE NATIVE PLANT SOCIETY SUMMER 2004

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HOW CAN I GET INVOLVED?

The Delaware Native Plant Society is open to everyone ranging from the novice gardener to the professional botanist. One of the primary goals of the society is to involve as many individuals as possible.

The DNPS is working on some significant projects at this time. We are undertaking reforestation projects at Prime Hook National Wildlife Refuge, at Blackbird Creek, New Castle County and Cedar Creek, Sussex County where we are installing tree tubes around newly sprouted seedlings. Help is also needed at our native plant nursery at the St. Jones Reserve with the monitoring and watering of plants along with many other nursery activities.

For more information, E-mail us at dnps@delawarenativeplants.org. Or visit our website at www.delawarenativeplants.org. Our website will have all of the past issues of *The Turk's Cap* along with a large section on native plants, as well as links to other environmental and plant related organizations.

A CALL FOR ARTICLES

If you would like to write an article for The Turk's Cap, we would love to print it. With like minded individuals as an audience, The Turk's Cap is a great venue for plant or habitat oriented writings.

We'll take just about anything from gardening tips to book reviews to poetry. Of course, it has to be about native plants, or issues related to native plants; just a minor constraint. Your imagination is the real key.

Contact Eric Zuelke (ezuelke@juno.com), or Keith Clancy at 302.674.5187 for more information.

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A NOT A CLOUD IN THE SKY WELCOME TO OUR NEWEST MEMBERS

April through June

Dr. John W. Gardner
Bill Haldeman
Mary Herrera
Dawn Johnson
Karen & Howard Priestley

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LETTER FROM THE PRESIDENT

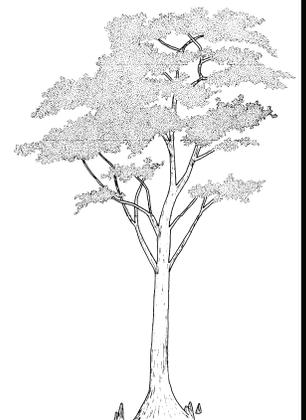
Does anyone else feel that they're busier than ever these days? Between planning for our reforestation management projects, ordering supplies for said projects, undertaking said projects, working in the nursery, doing botanical surveys at several wildlife refuges, and then working my day job, I feel like I am stretched to the max. Who said "its summertime and the living is easy?" I think they must have been off their rocker. Or, maybe they were on their rocker.

The DNPS is going to be (and has been) very busy this summer with reforestation management projects at three different sites (four if we count our 2000 project at Prime Hook State Wildlife Area) and your help is badly needed. Throughout the summer we will be installing protective tree tubes around the thousands of seedlings that have sprouted, and will be weeding invasive species and selectively removing weedy natives. In the fall we may be transplanting "extra" seedlings that are at flags. I only hope the tree tubes that we are using

Continued on page 2

The DNPS Vision

The purpose of the Delaware Native Plant Society (DNPS) is to participate in and encourage the preservation, conservation, restoration, and propagation of Delaware's native plants and plant communities. The Society provides information to government officials, business people, educators, and the general public on the protection, management, and restoration of native plant ecosystems. The DNPS encourages the use of native plants in the landscape by homeowners, businesses, and local and state governments through an on-going distribution of information and knowledge by various means that includes periodic publications, symposia, conferences, workshops, field trips, and a growing statewide membership organized by the DNPS.



LETTER FROM THE EDITOR**TIME TO GET A HIKIN'**

Though I'm a cold weather person at heart, summer does hold a special place for me because of one activity; heavy duty hiking! For many summers in a row when I was younger and still back in Ohio, my two brothers and I would go off a 10-14 day backpacking adventure. Usually we'd go to Smoky Mountain National Park, but we also went to Isle Royale in Lake Superior, and Porcupine Mountains in northern Michigan. I've also taken some of my own trips in Oklahoma, and Maine. With hiking in mind, I decided it was time for a change for our little newsletter, so beginning with this issue, I will no longer be writing my Plant-animal Highlight column. Instead, I will be writing a Native Plant Treks column which will highlight one natural area in Delaware and focus on some of the more interesting plants in that area and when to see them. If you like to get out and hike, but weren't quite sure where to go to see that favorite plant of yours, then I hope this column will be of some interest.

We may also be doing another change in the near future in the content of this newsletter. Our state Community Ecologist, Pete Bowman, who has been writing the Natural Community Highlight has accepted a job in North Carolina. So I may be discontinuing the Natural Community Highlight column. If there is a column topic you would like to see covered in the newsletter, then I'd love to hear your ideas. And if anyone is interested in writing a column on a regular basis, that would be even better.

Have a great summer and be sure to play in the rain!

oooo Eric Zuelke, Editor

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NATIVE PLANT TREKS**WHITE CLAY CREEK STATE PARK**

White Clay Creek State Park (WCCSP) is beautiful, scenic state park in northern Delaware. Located at the border of Delaware and Pennsylvania, it has one main trail that shares its scenery with both states. The park was created in 1968 when the state purchased 24 acres of land. The park has since grown to 3384 scenic acres in the continuing effort to preserve and protect the natural resources of the White Clay Creek valley. WCCSP is made up of 4 parcels of land that have been purchased over the years. These parcels are the Carpenter Recreation Area, Possum Hill, White Clay Creek Preserve, and Judge Morris Estate. Some of the many activities that are allowed are fishing, hunting, mountain bike riding, a life-course fitness trail, and of course hiking.

This park is predominantly forested and has some great rich woods habitats. The flora of the park are one of its greatest treasures. For the novice botanist all the way to the professional, WCCSP has some very interesting plants to find if you know where to look. Of course, timing is important with herbaceous plants, but the shag-bark hickory (*Carya ovata*), and alternate-leaf dogwood (*Cornus alterniflora*) can be seen at any time of year in the rich woods habitats. For those who love the spring ephemerals, the downy yellow violet (*Viola pubescens* var. *pubescens*), and cutleaf toothwort (*Cardamine concatenata*) can be found in the rich woods habitats. If you like being near the water, then watch for the pale jewel-weed

(*Impatiens pallida*), and eastern waterleaf (*Hydrophyllum virginianum*) in the floodplain areas and banks of the many streams that course they way down the slopes to White Clay Creek. Of the many fern species that make WCCSP their home, one in particular, the interrupted fern (*Osmunda claytoniana*) is really special. And if you happen to be wandering around at the edge of the forests in a field or thicket, be on the look out for the Carolina elephant-foot (*Elephantopus carolinianus*) which is in the aster family and blooms during the summer. Because WCCSP lies in the piedmont section of Delaware, there are many rock outcroppings which can hold many botanical surprises also.

WCCSP has so many botanical wonders in store for you, that I could not list them all here. But go hike around for yourself and see what you can find.

Please visit <http://www.destateparks.com/wccsp/index.asp> if you would like more information about this park.

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LETTER FROM THE PRESIDENT

Continued from page 1

(a plastic mesh type) will deter browsers such as squirrels, rabbits and especially deer (I am fearful that these critters may see the tempting seedlings through the mesh and seek to chew their way through the plastic to get at the rewards).

Earlier this year we received a \$1500 grant from the Partnership for the Delaware Estuary Program to buy needed tree tubes, and related supplies, and the Prime Hook National Wildlife Refuge received a \$10,000 Cooperative Conservation Initiative grant from the U.S. Fish & Wildlife Service (that was prominently mentioned by the Secretary of the Interior in a press release last May) to undertake management activities at the Prime Hook Wildlife Refuge's 18 acre reforestation site. Cooperators on this grant include the DNPS, the Prime Hook Volunteer Program, and the Partnership for the Delaware Estuary Program. All of us have committed to providing a 1:1 match. In our case, this will be entirely from volunteer hours. Therefore, I am beseeching DNPS members to come out and support this effort.

Germination at the Prime Hook site was very successful, as more than 70% of the flags had at least one (and often up to 4) seeds having germinated. The Cedar Creek site was also quite successful, with probably well over 2000 seedlings having emerged. The Blackbird Site appears to be the least successful, but has not been surveyed for over a month and needs to be checked again; its likely additional seedlings have sprouted.

These projects serve to begin the process, in a small way, of restoring coastal plain oak-hickory forest in Delaware; a community that is one of Delaware's most imperiled habitats.

I believe that we are in a battle against time and, more specifically, against the rampant development that is spreading across our small state at an unprecedented and unsustainable pace. These developments only serve to line the pockets of a few with substantial greenbacks while decimating our way of life and threatening to significantly diminish the lives of future generations. And what is being done about it? Little to nothing. A lot of complaining and public hearings that usually amount to nothing (as these projects never get denied) and only serve to drive up development costs that get passed onto the public.

We are at a crossroads in this battle and very little time is left. It pains me to no end to drive along Delaware "country" roads and see sign after sign after sign advertising thousands of acres of farmland as "Prime Development," and that's what these lands are becoming, as farm after farm is converted to huge developments. Is this what we want?

These reforestation projects only amount to a drop in the bucket in the grand scheme of things, but nevertheless are critical in stemming the tide that seeks to gobble up all remaining unprotected natural habitats. I would like to see members come out, en masse, to help with these projects and feel the sense of satisfaction that will result from a job well done. If, and there is no reason they cannot be, our efforts are successful, imagine the gratitude that our work today will generate from future generations. I won't be around to see it, but I can picture the celebration that will take place at "our" centennial forest at Prime Hook National Wildlife Refuge during the bicentennial celebration of the National Wildlife Refuge system in 2103. At this celebration I envision the Secretary of the Interior, along with the Governor of Delaware, other distinguished individuals and the public walking along a trail through this 100 year old (AKA "centennial") forest simply marveling at the beauty of this 18 acre forest and thanking the few dedicated individuals and organizations that made it all possible with work started way back in 2003.

I am looking for a few individuals that would like to manage these reforestation sites. The principal goal of the management is to ensure that a successful reforestation project results. Actions include monitoring the site, scheduling management workdays that include installing tree tubes, some transplanting of seedlings, weeding of invasives and aggressive natives, and repairing tree tube damage. It is only with an ongoing monitoring and managing program in place, can we ever expect to have a successful reforestation project. If you are interested in being a steward at one of these sites or want more information please contact the Delaware Native Plant Society.

I will be recommending to our Board of Directors, officers, and members at our next meeting (on July 20, 2004) that we postpone scheduling any other field trips until these reforestation management projects are satisfactorily completed this year. So, the more people we can get to participate the sooner we will finish the first stage of these projects (i.e., installing tree tubes).

It pains me to conclude this letter with the following news. Because of my tenuous employment status in Delaware and the fact that my freelance photography business has been more than a struggle, I was forced to take some drastic measures (like apply for a real job). Anyway, I have accepted a job offer as a botanist with the U.S. Department of Agriculture and will be relocating to New York in early September. Therefore, I will have to step down as president of the DNPS. I hope that we will be able to find a member that would like to step into this position ASAP and serve out my term (that runs to 2006). I will continue to play an active, although much more limited, role as a member of the society. I have enjoyed these past 6 years with the DNPS immensely and will miss everyone whom I have come to know these last few years. I wish everyone the best that life has to offer and I hope that the DNPS continues to grow and prosper. ☘

Signing off for the final time,
Keith Clancy

NATURAL QUOTES

"Signals abound that the loss of life's diversity endangers not just the body but the spirit. If that much is true, the changes occurring now will visit harm on all generations to come."

E. O. Wilson, *The Diversity of Life*, 1992

FEATURE ARTICLE

IRRIGATING THE HOME GARDEN

(Editor's note: Reprinted from the *Virginia Cooperative Extension Publication Number 426-322, August 1996*.)

Introduction

Adequate soil moisture is essential for good crop growth. A healthy plant is composed of 75 to 90% water, which is used for the plant's vital functions, including photosynthesis, support (rigidity), and transportation of nutrients and sugars to various parts of the plant. During the first few weeks of growth, plants are becoming established and must have water to build their root systems.

While growing, vegetable crops need about 1 to 2 inches of water per week in the form of rainwater or irrigation water depending on the type of soil. One thorough watering each week is usually enough for most soils. The soil should be wetted to a depth of 5 to 6 inches each time you water and not watered again until the top few inches begin to dry out. An average garden soil will store 2 to 4 inches of water per foot of depth. Keep a rain gauge near your garden, then supplement rainfall with irrigation water if needed. In addition, there are ways to reduce the amount of water you have to add.

Reducing water demands

All of the water added to the garden may not be available to plants, particularly if the soil is a heavy clay. Clay particles hold soil moisture tightly; if, for example, there are 4 1/2 inches of water per foot of this type of soil, there may be as little as 1 1/2 inches of this water available for plants. A higher level of humus in the soil, brought about by the addition and breakdown of organic matter, can increase the amount of water available. By causing clay particles to aggregate (stick together), humus also adds air spaces to tight clays, allowing moisture to drain to lower levels as a reserve, instead of puddling and running off the top of the soil.

The moisture-holding capacity of sandy soils is also improved by additions of organic matter. Though most soil water in sandy soil is available to plants, it drains so quickly that roots are unable to reach water only a few days after a rain. Humus in sandy soil gives the water something to cling to until it is needed by plants.

Addition of organic matter, then, is the first step in improving the moisture conditions in your garden.

Mulching is another a cultural practice which can significantly decrease the amount of water that must be added to the soil. A 6 to 8 inch organic mulch can cut water needs in half by smothering weeds (which take up and transpire moisture) and by reducing evaporation of moisture directly from the soil. Organic mulches themselves hold some water and increase

the humidity level around the plant. Black plastic mulch also conserves moisture but may dramatically increase soil temperatures during the summer if not covered by other mulch materials or foliage.

Shading and the use of windbreaks are other moisture-conserving techniques. Plants that wilt in very sunny areas can benefit from partial shade during the afternoon in summer. Young plants, especially, need protection. Air moving across a plant carries away the moisture on the leaf surfaces, causing the plant to need more water. In very windy areas, the roots often cannot keep up with leaf demands, and plants wilt. Temporary or permanent windbreaks significantly reduce this stress.

Despite the use of these cultural practices, your garden may need a lot of water. When rainfall is sparse and the sun is hot, watering can benefit your garden with increased yields. It may save the garden altogether in a severe drought.

Irrigation practices, when properly used, can:

- Aid in seed emergence.
- Reduce soil crusting.
- Improve germination and plant stand.
- Reduce wilting of transplants.
- Increase the size of tomatoes, cucumbers, and melons.
- Prevent premature ripening of peas, beans, and sweet corn.
- Maintain uniform growth.
- Improve the quality and yields of most crops.

Irrigation methods

The home gardener has several options for applying water to plants including a sprinkler can; a garden hose with a fan nozzle or spray attachment; a portable lawn sprinkler; a perforated, plastic soaker hose; a drip or trickle irrigation system; or a semi-automatic drip system. Quality equipment will last for a number of years when properly cared for. When making a decision as to which type of watering equipment you will use, there are a number of things to consider.

The purchase of a specific type of watering equipment depends upon available water facilities, water supply, climate, and garden practices. If there is no outdoor spigot near the garden, the expense of having one installed may be greater than the benefits gained, except in very drought-prone areas or in the case of a gardener who is fully dependent on the season's produce. Where rainfall is adequate except for a few periods in the summer, it is wise to keep watering equipment simple. A rain barrel or a garden hose with a fan-type sprinkler may suffice; a water breaker for small seedlings is useful. In areas where there are extended periods of hot weather without precipitation, the local water supply is likely to be short. Since overhead sprinklers waste water, a drip irrigation system may be in order. Drip irrigation puts water right at the roots and doesn't wet plant leaves, helping to control some diseases. Timers are available that allow automatic watering with drip irrigation systems.

Several types of drip or trickle equipment are available. The soaker hose is probably the easiest to use as no installation is required. It is a fibrous hose that allows water to slowly seep out all along its length. It is simply laid at the base of the plants and moved around the garden. There are also complete kits containing attachments and PVC hose with holes to allow gradual water release. These are intended for semi-permanent installation and usually last 2 to 5 years. With this type, a flow

regulator usually has to be included with the system so that the water can reach the end of the hose without being sprayed out at full force. A special double-walled type of irrigation hose has been developed which helps to maintain a more even flow. Finally, there is the emitter-type system, best used for small raised beds or container gardens, in which short tubes, or emitters, come off a main water supply hose and go right to the roots of the individual plants. This is generally the most expensive form of irrigation and the most complex to set up, but it has advantages. The weeds in the area are not watered and evaporation from the soil is minimized. This type of system is best used in combination with a coarse mulch or black plastic. Drip systems can have problems with clogging from soil particles and/or mineral salts suspended in water taken from springs or wells. New designs take this problem into consideration; some include filters and self-flushing emitters. It is wise to make a complete investigation and comparison before purchasing a drip irrigation system.

Basic techniques and principles for watering

For overhead or sprinkler watering, adjust the rate of water application to about 1/2 inch per hour. A faster rate will cause run-off unless your soil has exceptionally good drainage. To determine the rate for a sprinkler, place small cans at various places within the sprinkler's reach, and check the level of water in the cans at 15-minute intervals.

When using the oscillating type of lawn sprinkler, place the sprinkler on a platform higher than the crop (to prevent water from being diverted by plant leaves), and try to keep the watering pattern even by frequently moving the sprinkler and overlapping about half of each pattern.

Wet foliage overnight can encourage diseases, so do not use sprinkle irrigation in the evening. Morning watering is preferred as there will be less water lost to evaporation than in the heat of the day. Add enough water to soak the soil to a depth of 5 to 6 inches. The amount required varies with the nature of your soil. Frequent, light waterings will encourage shallow rooting which will cause plants to suffer more during drought periods, especially if mulches are not used. On the other hand, too much water, especially in poorly drained soils, can be as damaging to plant growth as too little water; it deprives the roots of oxygen needed to grow.

By knowing the critical watering periods for selected vegetables or vegetable types, you can reduce the amount of supplemental water you add. This can be important, especially where water supplies are limited. In general, water is most needed:

- during the first few weeks of development
- immediately after transplant
- during development of fruits

If water supplies are short in your area and you wish to use "grey water" (water from household uses) on your vegetable garden, a few rules should be observed:

- Do not use any water run through the toilet, because of the possibility of contamination from fecal organisms.
- Avoid the use of kitchen waste water that contains grease or harsh cleaners, ammonia, bleach, softeners, or non-biodegradable detergents.

- If using water from the bathtub or washing machine, use only mild, biodegradable soaps. Omit softeners and bleaches. Allow the wash and rinse water to mix, if possible, to dilute the soap content. Never use a borax-containing product (such as washing soda) in water to be used on a garden because of the danger of applying plant-toxic levels of boron.
- Apply grey water to the soil, not to plant leaves. 🌿

◊◊◊◊ Diane Relf, Extension Specialist, Environmental Horticulture

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NATIVE PLANT COMMUNITY HIGHLIGHT

***Liriodendron tulipifera*-*Quercus rubra*/*Polystichum acrostichoides* Forest**

Tuliptree-Northern red oak/Christmas fern Forest

Introduction

Scattered throughout the state, rich woods are particular highlights come springtime. This community occurs on moist, nutrient-rich, loamy soils, and is rich in species. While there are certain species that are typical of this community throughout Delaware, such as *Liriodendron tulipifera* (tuliptree) and *Polystichum acrostichoides* (Christmas fern), individual occurrences can be quite variable. For this reason, this community type has been divided into two distinct variants; one for the Piedmont, and one for the Coastal Plain.

Community structure/composition (Piedmont)

This variant is typically restricted to the mid to upper reaches of steep slopes. In addition to *L. tulipifera* (tuliptree), *Quercus rubra* (northern red oak) is a characteristic tree, but these species may be joined in the canopy by *Quercus alba* (white oak), *Quercus coccinea* (scarlet oak), *Carya ovata* (shagbark hickory), *Carya cordiformis* (bitternut hickory) and occasionally *Fraxinus americana* (white ash) and *Tilia americana* (basswood). *Cornus florida* (flowering dogwood) and *Betula lenta* (black birch) are common in the understory. The shrub layer is typically characterized by *Hamamelis virginiana* (witch-hazel) and *Viburnum prunifolium* (black-haw), and *Viburnum acerifolium* (maple-leaved viburnum) may be abundant. The herbaceous layer can be quite diverse, with frequent species including *Podophyllum peltatum* (mayapple), *Sanguinaria canadensis* (bloodroot), *P. acrostichoides* (Christmas fern), *Collinsonia canadensis* (Canada horse-balm), *Galium lanceolatum* (Torrey's wild licorice), *Botrychium virginianum* (rattlesnake fern), *Aralia nudicaulis* (wild sarsaparilla), *Prenanthes altissima* (rattlesnake root), *Panax trifolius* (dwarf ginseng) and *Cimicifuga racemosa* (black cohosh). Other species that may be present include *Deparia acrostichoides* (silvery spleenwort), *Panax quinquefolius* (American ginseng), *Hydrastis canadensis* (goldenseal), *Phegopteris hexagonoptera* (broad beech fern), *Adiantum pedatum* (maidenhair fern), and *Caulophyllum thalictroides* (blue cohosh), among many others.

Community structure/composition (Coastal Plain)

These so-called "rich wood pockets" are typically found on slopes above streams beyond the range of regular flooding. However, they may also be found as small occurrences unassociated with a stream, on areas of rich, loamy soil. Like the

Piedmont variant, the Coastal Plain variant is dominated by *Liriodendron tulipifera* in the canopy. *Quercus rubra* is a good indicator of the type, and may be joined by *Carya glabra* (pignut hickory), *Carya cordiformis* (bitternut hickory) and *Liquidambar styraciflua* (sweetgum). *Cornus florida* (flowering dogwood) is characteristic in the subcanopy. The shrub layer ranges from moderately dense to sparse, and frequently includes *Viburnum prunifolium* (black-haw), as well as *Lindera benzoin* (spicebush) and *Viburnum acerifolium* (maple-leaved viburnum). The herb layer is diverse and typically includes a number of species restricted to this community type on the Coastal Plain. Indicator species for this variant are *Polystichum acrostichoides* (Christmas fern), *Podophyllum peltatum* (mayapple), and *Sanguinaria canadensis* (bloodroot). In addition, there are a number of other herbaceous species that are frequently present, including *Collinsonia canadensis* (Canada horse-balm), *Asplenium platyneuron* (ebony spleenwort), *Cardamine concatenata* (cutleaf toothwort), *Circaea lutetiana* (enchanter's nightshade), *Botrychium virginianum* (rattlesnake fern), *Senecio aureus* (golden ragwort), *Cimicifuga racemosa* (black cohosh), and *Solidago caesia* (bluestem goldenrod), as well as many others. There are also a number of herbaceous vines characteristic of Coastal Plain rich woods, including *Amphicarpa bracteata* (hog-peanut), *Menispermum canadense* (Canada moonseed), *Matelea carolinensis* (Carolina anglepod), and *Passiflora lutea* (yellow passion-flower).

Distribution

Occurrences of this community type tend to be rather small for a forest habitat, usually only a few acres. However, this does not diminish their significance in terms of conservation or botanical diversity. Several occurrences of the Piedmont variant are known from the Red Clay Creek valley, and are likely to occur in the Brandywine valley as well. The Coastal Plain variant is known from numerous scattered localities throughout the state, with notable occurrences at Woodland Beach Wildlife Area, Kent County and Prime Hook Wildlife Area, Sussex County. Species rich forests are known to occur throughout the Atlantic Coastal Plain, although their relations to this type are unclear. Similar community types occur in other eastern states but their composition can vary quite a bit.

Conservation Status

Currently ranked as an S? (questionable ranking) by The Nature Conservancy, but may be ranked an S3 in the future. There is currently no formal state or federal protection for this community. 🌿

◊◊◊◊ Peter Bowman

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NATIVE PLANT HIGHLIGHT

GENUS MONOTROPA

The genus *Monotropa* is featured in this edition and is represented in Delaware by *Monotropa hypopithys* L. (American pinesap), and *Monotropa uniflora* L. (ghost-flower). These are perennial plants that are found in both the Piedmont and Coastal Plain physiographic provinces of Delaware and are typically found growing in shady, moist woodlands. Ghost-flower, also known as Indian-pipe, is common throughout the State and American pinesap is only infrequently found.

These species usually begin flowering in Delaware in mid-summer and shed their seed in the fall. The entire plant of American pinesap is reddish-yellow in color and ghost-flower is white, but occasionally can be light-pink. Both species are about 6 – 8 inches tall with scale like leaves on a single stem. Both species have nodding flowers and when the flower matures, the crook at the top of the stem straightens so that the plant is erect in posture. The fruit is a capsule that will split down its sides when dry and slowly release very fine seeds to the wind.

Both American pinesap and ghost-flower lack chlorophyll and are thus parasitic, meaning they derive all their nutrients from other plants. These species are parasitic on the underground tissue of various plants and in order to be parasitic, they have developed a relationship with a fungus. The mycorrhiza of this fungus serves as a “bridge” that transfers nutrients from the photosynthetic host plant to the parasitic plant.

When walking the woodlands this summer, keep your eyes to the forest floor and you will likely see the ghost-flower, and if your lucky, the American pinesap. 🌿

◦◦◦◦ William McAvoy, DNPS Vice-President

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EVENT HIGHLIGHT

DNPS 5TH ANNUAL MEETING

The annual meeting this year, held at Ashland Nature Center was a great success and a lot of fun! We had a great presentation on Delaware piedmont geology by our keynote speaker, Sandy Schenk, lots of good food, a plant slide show challenge for two of our resident botany experts, Janet Ebert and Jack Holt (who did very well by the way on their quizzes by only missing one plant!), and a very interesting field trip along the Red Clay Creek.

We also had elections for the Board positions. Keith Clancy was re-elected to be President, William McAvoy as Vice-president, and Rick Mickowski will maintain his position for another two-year term as Secretary.

We hope everyone can make it out to next years annual meeting as they keep getting bigger and better each year, and it's an excellent opportunity to get involved in the activities of your society. Details will be announced at a later date for next years meeting time and place. 🌿

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THOUGHTS FROM THE EDGE OF THE GARDEN

DNPS NURSERY UPDATE

The nursery is coming along fine this summer. We have a group of members who are volunteering their time on a regular basis and those extra hands are really making a difference, particularly since we have a bumper crop of plants to repot this summer, and a bumper crop of rabbits chewing them all down. But solutions are being worked on for this little furry problem! And plans for our November plant sale are already in the works, so stay tuned.

DNPS REORGANIZATION

With the announcement from Keith of his departure from the DNPS in September, the Society will be going through

some flux for a short time. The Board will be having some special meetings to reorganize positions and responsibilities, as well as deal with the normal business items such as the nursery, the upcoming plant sale, and our reforestation projects. Stay tuned for more news on all of this, and if any members would like to take the reins on our reforestation projects, this would be a great time.

REFORESTATION PROJECTS UPDATE

So far, our reforestation efforts are going great. To date, approximately 2000 plants have sprouted at Cedar Creek, approximately 70% of the flags had seeds that sprouted at Prime Hook National Wildlife Refuge, and approximately 50 plants have sprouted at Blackbird (although a couple of members will be checking this site again shortly and we hope additional seedlings will have come up). At Cedar Creek we have installed a total of 488 protective tree tubes around seedlings and overall the future of these sites looks good right now. 🌿

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RESOURCES AND REVIEWS

HOW TO GROW WILDFLOWERS AND WILD SHRUBS AND TREES IN YOUR OWN GARDEN, BY HAL BRUCE

Time for a fun read! One of my favorite books, as well as an introduction to Delaware native plants, was published in 1976 by Hal Bruce, a former taxonomist at Winterthur. He wrote this book while teaching a course requiring commuting from Wilmington or his beach place to Georgetown. During these drives the author explores plants he sees: the Turks-cap lily: “the most beautiful of all”, milkweeds: “much neglected by gardeners”, and the glorious fall colors of poison ivy: “don't get too close”. Bruce mentions the fragrance of goldenrod, but he doesn't mention that the common milkweed flower has a wonderful scent.

The author covers shrubs and trees such as native azaleas and the American fringe tree. He includes some naturalized plants not indigenous to Delmarva noting their origins. Bruce voices his concern about habitat destruction which he notes was also a concern of Tatnall in 1946 and is still very much a concern today. The writer makes the point that perhaps the most compelling reason for using native American plants in our gardens is the chance that by so doing we might help save a species from oblivion.

The book is arranged by season with special chapters which include winter trees and the coastal plain in summer. Bruce includes some transplanting tips and ends with plants for problem areas. To quote a reviewer on Amazon.com: “Throughout, the author writes with a passionate, personal, engaging perspective on these plants never hesitating to criticize plant features he dislikes, but glowing in praise of their attributes and value.”

Join the ride. Although out-of-print, this book is available in Delaware public libraries and from the Amazon.com used book website. 🌿

◦◦◦◦ Gwendolyn Elliott, DNPS Member

UPCOMING EVENTS

SATURDAY, 14 AUGUST 2004 – SHELL IDENTIFICATION WORKSHOP FROM 1 PM TO 3 PM. WONDERING WHAT TO DO WITH THOSE SHELLS YOU COLLECTED OVER VACATION? DR. KEVIN ROE WILL TEACH YOU HOW TO IDENTIFY SOME OF THE MORE COMMON MOLLUSKS FOUND IN DELAWARE. FEE IS \$8 FOR MUSEUM MEMBERS, AND \$15 FOR NON-MEMBERS. REGISTER BY AUGUST 9. CALL 302.658.9111 FOR MORE INFORMATION, OR TO REGISTER BY PHONE, OR ON THE WEB AT [HTTP://WWW.DELMNH.ORG](http://www.delmnh.org).

SATURDAY, 11 SEPTEMBER 2004 – ANNUAL FALL NATIVE PLANT SALE AT ADKINS ARBORETUM. FOR MORE INFORMATION CALL 410.634.2847, OR ON THE WEB AT [HTTP://WWW.ADKINSARBORETUM.ORG](http://www.adkinsarboretum.org).

SATURDAY, 11 SEPTEMBER AND SUNDAY, 12 SEPTEMBER 2004 – NATIVE PLANT SALE AT BOWMAN'S HILL WILDFLOWER PRESERVE. A SELECTION OF OVER 200 SPECIES OF HIGH-QUALITY HERBACEOUS AND WOODY PLANTS OFFERED FOR SALE. FALL IS AN EXCELLENT TIME FOR PLANTING NATIVES. FOR MORE INFORMATION CALL 215.862.2924, OR ON THE WEB AT [HTTP://WWW.BHWP.ORG/INDEX.PHP](http://www.bhwp.org/index.php).

SATURDAY, 18 SEPTEMBER 2004 – ANNUAL TREE SPREE FAIR FROM 10 AM TO 3 PM. THE NEW CASTLE COUNTY TREE COMMISSION AND DCH INVITE THE WHOLE FAMILY TO CELEBRATE THE MANY BENEFITS OF TREES AT THE 10TH ANNUAL TREE SPREE FAIR, HELD AT CAROUSEL PARK ON LIMESTONE ROAD IN THE PIKE CREEK VALLEY. THIS YEAR'S FAIR WILL PARTNER WITH PIKE CREEK COMMUNITY DAY AND WILL FEATURE HOURLY TREE WORKSHOPS, FREE NATIVE TREE SEEDLINGS, NATURE HIKES, LIVE DEMONSTRATIONS AND EXHIBITS, CHILDREN'S ACTIVITIES, HAYRIDES, AND MANY OTHER OFFERINGS OF THE PIKE CREEK EVENT. A CEREMONIAL TREE PLANTING CELEBRATING THE COMPLETION OF THE COUNTY'S TREE SPREE CAMPAIGN WILL BE ATTENDED BY GOVERNOR RUTH ANN MINNER. CELEBRATION WILL BE HELD RAIN OR SHINE (EXCEPT IN THE CASE OF SEVERE WEATHER). FOR MORE INFORMATION, CALL 302.658.6262, OR ON THE WEB AT [HTTP://WWW.DEHORT.ORG/EVENTS/INDEX.HTM](http://www.dehort.org/events/index.htm).

SATURDAY, 25 SEPTEMBER 2004 – KNOWING NATIVE PLANTS: THE AMAZING ASTER FAMILY. THIS CLASS AT BOWMAN'S HILL WILDFLOWER PRESERVE WILL FOCUS ON THE SHOWIEST GROUP OF FALL BLOOMERS-THE ASTER FAMILY (INCLUDING SUNFLOWERS, ASTERS AND GOLDENRODS). LEARN ABOUT THESE UNIQUE FLOWERS AND THEIR SUCCESSFUL REPRODUCTIVE STRATEGIES. SLIDES/DISCUSSION FOLLOWED BY AN OUTDOOR TOUR. \$8 PRESERVE MEMBERS; \$12 NON-MEMBERS. FOR MORE INFORMATION AND TO PRE-REGISTER, CALL 215.862.2924, OR ON THE WEB AT [HTTP://WWW.BHWP.ORG/INDEX.PHP](http://www.bhwp.org/index.php).

SATURDAY, 06 NOVEMBER 2004 – FOURTH ANNUAL DE NATIVE PLANT SOCIETY NATIVE PLANT SALE. MORE DETAILS TO COME LATER.

DNPS BI-MONTHLY MEETINGS FOR 2004 – ARE CURRENTLY SCHEDULED THE 3RD TUESDAY OF EVERY OTHER MONTH. OUR NEXT MEETINGS WILL BE: 21 SEPTEMBER, 16 NOVEMBER. MEETINGS WILL TAKE PLACE (UNLESS OTHERWISE NOTIFIED) AT 7 PM AT THE ST. JONES RESERVE, 818 KITTS HUMMOCK RD. ABOUT 3/4 MILE EAST OF THE RT. 9/113/KITTS HUMMOCK ROAD INTERCHANGE JUST AT THE SOUTHERN EDGE OF DOVER AIR FORCE BASE. WE PLAN TO HAVE GUEST SPEAKERS AT EACH MEETING (SPEAKERS AND THEIR TOPICS WILL BE ANNOUNCED AT LATER DATES). CHECK OUR WEBSITE FOR ADDITIONAL DETAILS OR EMAIL US AT DNPS@DELAWARENATIVEPLANTS.ORG.

Membership Application

DELAWARE NATIVE PLANT SOCIETY

Member Information

Name:

Business Name or Organization:

Address:

City and Zip Code:

Telephone (home/work):

E-mail address:

- Full-time Student \$10.00
- Individual \$15.00
- Family or Household \$18.00
- Contributing \$50.00
- Business \$100.00
- Lifetime \$500.00
- Donations are also welcome \$ _____

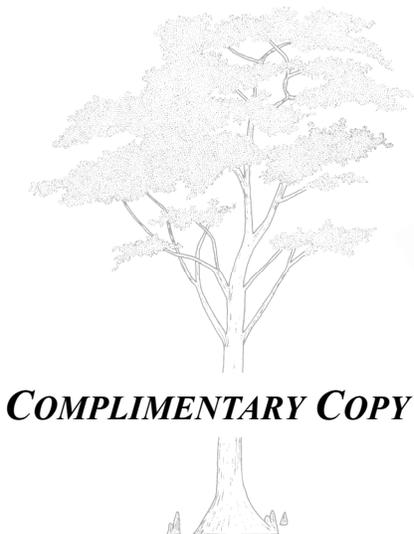
Membership benefits include:

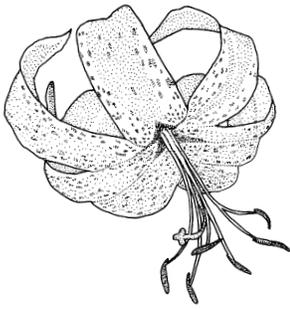
- * The DNPS quarterly newsletter, *The Turk's Cap*
- * Native plant gardening and landscaping information
- * Speakers, field trips, native plant nursery and sales

Total Amount Enclosed: \$

**Make check payable to:
DE Native Plant Society
P.O. Box 369, Dover, DE 19903**

**DELAWARE NATIVE PLANT SOCIETY
P.O. BOX 369
DOVER, DELAWARE 19903**





The Turk's Cap

THE NEWSLETTER OF THE DELAWARE NATIVE PLANT SOCIETY AUTUMN 2004

IN THIS ISSUE

- Page 1** ○ *A Call for Articles*
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HOW CAN I GET INVOLVED?

The Delaware Native Plant Society is open to everyone ranging from the novice gardener to the professional botanist. One of the primary goals of the society is to involve as many individuals as possible.

The DNPS is working on some significant projects at this time. We are undertaking reforestation projects at Prime Hook National Wildlife Refuge, at Blackbird Creek in New Castle County and Cedar Creek in Sussex County where we have installed tree tubes around newly sprouted seedlings. Help is also needed at our native plant nursery at the St. Jones Reserve with the monitoring and watering of plants along with many other nursery activities.

For more information, E-mail us at dnps@delawarenativeplants.org. Or visit our website at www.delawarenativeplants.org. Our website will have all of the past issues of *The Turk's Cap* along with a large section on native plants, as well as links to other environmental and plant related organizations.

A CALL FOR ARTICLES

If you would like to write an article for The Turk's Cap, we would love to print it. With like minded individuals as an audience, The Turk's Cap is a great venue for plant or habitat oriented writings.

We'll take just about anything from gardening tips to book reviews to poetry. Of course, it has to be about native plants, or issues related to native plants; just a minor constraint. Your imagination is the real key.

Contact Eric Zuelke (ezuelke@juno.com), or Bill McAvoy at 302.376.5416 for more information.

A PRAIRIE OF VIOLET BLAZING-STARS WELCOME TO OUR NEWEST MEMBERS

July through September

Marjoie Bushong
 Brian Derrickson
 Bob Smiles

LETTER FROM THE PRESIDENT

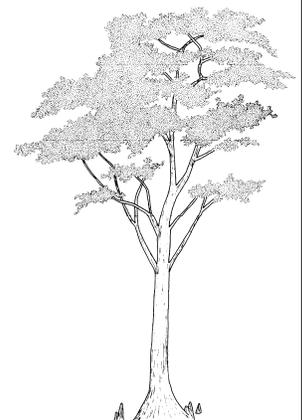
As Acting President of the Delaware Native Plant Society, I would like to take this opportunity to acknowledge and thank our former President, Keith Clancy. You should be aware that Keith has begun a new chapter in life and has left the area for bigger and better things. Keith was one of the founders of the Society and was our first President. Keith worked extremely hard to establish the Society and was, and continues to be, deeply committed to the promotion and conservation of native plants. We are grateful for all of Keith's efforts and we wish him the best in his new endeavors. Keith will remain a member of the Society and hopefully we will see him from time to time at Society events and field trips.

I am pleased to say that since the early days of the Society, we have grown to well over 100 members and I am encouraged that those numbers will continue to grow. As our membership increases, my hopes are that new members will become active in the Society and perhaps stimulate

Continued on page 2

The DNPS Vision

The purpose of the Delaware Native Plant Society (DNPS) is to participate in and encourage the preservation, conservation, restoration, and propagation of Delaware's native plants and plant communities. The Society provides information to government officials, business people, educators, and the general public on the protection, management, and restoration of native plant ecosystems. The DNPS encourages the use of native plants in the landscape by homeowners, businesses, and local and state governments through an on-going distribution of information and knowledge by various means that includes periodic publications, symposia, conferences, workshops, field trips, and a growing statewide membership organized by the DNPS.



LETTER FROM THE EDITOR**SHAPING A SINGULAR SOCIETY**

With the departure of our first President, we are moving into new waters; those of having to reshape the DNPS. A new cast of characters and roles is emerging; William McAvoy as our new Acting President, Quentin Schlieder as our ambitious and highly motivated Programs Coordinator, Bob Edelen as our Display Board Coordinator, and even myself as our new Nursery Manager. I'm excited about these changes and am gaining more and more confidence as the months pass that the DNPS is actually important and that people truly care about its success. As a new Society there is always a tenuous period of growth and development, but I believe, as we approach our seventh year, that we are becoming firmly integrated into the realm of conservation in the Mid-Atlantic region and that we are accomplishing the goals set out in our mission statement and are making a small contribution to the global community and our fragile planet.

And speaking of our mission statement; we're doing a lot in the next two months to meet it. This newsletter is chock full of very educational articles on native plants, and on November 6th, we are having our fourth annual native plant sale to help distribute native plants into our own backyards. We hope everyone can make it to the plant sale.

I'd also like to introduce a new column that will replace the plant community highlight. Our own Bob Edelen, DNPS member and plant propagator extraordinaire for our nursery has agreed to contribute a regular column that we've entitled "Gardening with native plants." This column will be great for those of you who have in interest in propagating your own native plants.

Have a great autumn and remember; big piles of leaves are for jumping into! 🍂

oooo Eric Zuelke, Editor

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NATIVE PLANT TREKS**CAPE HENLOPEN STATE PARK**

If you like beach and dune habitats, then Cape Henlopen State Park (CHSP) is for you! This 5193-acre park is situated in Sussex County, east of the town of Lewes right at the interface of Delaware Bay and the Atlantic Ocean.

Near the beginning of World War II, in 1941, the U.S. Army established a military base at Cape Henlopen. Bunkers and gun emplacements were camouflaged among the dunes, and concrete observation towers were built along the coast to spot enemy ships. In 1964, the Department of Defense declared 543 acres of the Cape lands as surplus property. The State of Delaware acquired the property and established Cape Henlopen State Park. Since then the park has grown to encompass beach, dune, salt marsh and pineland habitats which all support numerous uncommon and rare species of plants and animals.

This park has many excellent walking trails that weave in and out of varying habitats. For the botanist-minded, this provides the opportunity to see quite a diversity of species during a single hike.

The primary forest community of CHSP is the pitch pine/beach heather/panic grass forest/woodland community. In the pitch pine woodlands, there is a beautiful, low-growing,

yellow flowered shrub called golden-heather (*Hudsonia ericoides*). This plant is in the rock-rose family (Cistaceae) and blooms in the summer to late summer.

As you hike out of the thicker pitch pine forest, you'll transition into more open sandy woodlands with a mixture of pitch pine and deciduous trees and shrubs. Here you may run into the eastern prickly-pear cactus (*Opuntia humifusa*). Most people think of this member of the cactus family as a southwestern species, but it in fact occurs throughout most of the United States, and is difficult to miss with its bright yellow flower and distinctive morphology.

One of the first habitats you may encounter after walking out of the sandy woodlands is the saltmarsh. Oftentimes, there is a sharp ecotone between the forest and saltmarsh. Here you may find seaside goldenrod (*Solidago sempervirens*).

And finally, if you just keep walking east, you'll run into the dunes. There is a great diversity of plants living in this community type. One of the more diminutive, but arguably most beautiful plants is the seabeach primrose (*Oenothera humifusa*). Its yellow to orange colored flowers are striking against a bare backdrop of sand. Another showy plant is sand-heather (*Hudsonia tomentosa*). This relative of *H. ericoides* also has yellow flowers, but prefers a little drier and sandier habitat. One of the most common plants you'll see on the dunes is American beachgrass (*Ammophila breviligulata*). This member of the grass family (Poaceae) forms the core of what holds the dunes together. Without the clingy roots of beachgrass, you'd have plain old beach that would wax and wane with the whims of the wind and ocean.

Cape Henlopen State Park is a wonderful place to visit, and don't think its just for summertime beach fun. This park is fascinating in the winter also as the dunes, beach, and ocean take on an entirely different character.

Please visit <http://www.destateparks.com/chsp/chsp.htm> for more information. 🍂

oooo Eric Zuelke, Editor

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LETTER FROM THE PRESIDENT

Continued from page 1

some of our more long-standing members to participate as well. Currently, there is a small group of "regulars" that consistently participate and we are extremely grateful for all their efforts, but we would love to have participation from a more diverse crowd. I have noticed that during our bi-monthly meetings, when we get a larger group of people with a diversity of ideas, it stimulates higher standards in the decisions that we make. Because of this I encourage all members to attend our meetings to offer your ideas and to learn more about how one can help. Our last meeting in September was very well attended, likely due to our guest speaker that evening, John Graham from the Delaware Field Office of The Nature Conservancy. But what was most pleasing, was that the majority of those attending that night stayed for the business meeting! Much was discussed and accomplished at that meeting and I left encouraged that we can continue to be as productive in the future. So again, I ask all members to consider giving up a little bit of that precious time all of us have so little of. With more member participation, we can become stronger and more effective as a Society and thus

give back more to the members themselves.

Our annual native plant sale is just around the corner and I would like to acknowledge all the work that Eric Zuelke has done as manager of the nursery. He has put a tremendous amount of time into the various chores that are needed to maintain the nursery and his efforts are greatly appreciated. The plant sale is a very important event for the Society. The sale gives us the opportunity to promote the use of native plants in the landscape, recruit members, and it acts as our most significant fund raising event of the year.

As you know, the Society has been active in reforestation projects in the state over the last several years and many of you have actively participated in tree planting events. We still have a few obligations left to fulfill regarding specific reforestation projects, but once those obligations are met, the Society will no longer be as deeply involved in reforestation projects in the future. We will certainly continue to promote the conservation of forests and encourage reforestation efforts in the state, and even encourage DNPS volunteers to participate in the tree planting activities of other conservation organizations, but taking full responsibility for reforestation projects is too much of a strain on the Society. The amount of time and effort needed for such projects is enormous. We will now be putting more of a focus on improving our native plant nursery and sale, providing speakers for all our bi-monthly meetings, as well as our annual meeting, and planning quality field trips for our members.

I am excited about the future of the Delaware Native Plant Society and with help from members, we can continue to grow and help fulfill our mission to encourage the conservation of native plants and their habitats.

Sincerely,

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EVENT HIGHLIGHT

FIELD TRIP TO PRIME HOOK NATIONAL WILDLIFE REFUGE

Prime Hook National Wildlife Refuge has many conservation projects underway at this time. One of those projects is allowing fallow fields that have been taken out of agricultural production to succeed back to natural habitats and studying different land management styles. Part of this project is doing a grassland bird study also to see how different management styles affect grassland bird breeding behavior.

On Saturday, 03 October 2004, the DNPS took a field trip through one of these fields to learn more about the native vegetation growing there. The field trip was part of the refuge's Annual Fall Waterfowl Festival. This field trip was part one of a two-part workshop by the DNPS to educate people on how to identify, collect, and propagate the seeds of native plants, and how different seed dispersal mechanisms work.

A large gathering of people attended this field trip and everyone was quite happy to see the different stages of succession and the natural beauty of the fallow field that was in sharp contrast to an adjacent corn field that was quite sterile in appearance.

Unfortunately, the seeds in the target plants in the field had not matured yet, so we were not able to collect much. However, we have many other natural seed sources, so we'll have plenty of seed for part two of our workshop which will be held in February 2005. More details to come later.

NATURAL QUOTES

"There is something remarkably more beautiful about flowers that you yourself have planted, and divided, and cared for, than any other flowers. It reminds one that the creation of beauty is a happy experience."

Claudia Lady Bird Johnson

FEATURE ARTICLE

DNPS TO OFFER A SPECIAL NATIVE: THE CUSTARD APPLE

The Annual Delaware Native Plant Society native plant sale, which is scheduled for Saturday, November 6th from 10:00 AM to 3:00 PM at the St. Jones National Estuarine Research Reserve south of Dover, will offer a great opportunity to acquire choice plants at reasonable prices from documented sources on the Delmarva Peninsula. Among the selections offered will be trumpet creeper (*Campsis radicans*) and cardinal flower (*Lobelia cardinalis*) which are highly attractive to hummingbirds, butterfly flower (*Asclepias tuberosa*) which is a special favorite of Swallowtails and other butterflies and swamp rosemallow (*Hibiscus moscheutos*) a great summer-flowering herbaceous perennial tolerant of wet areas.

Perhaps the most tantalizing offering, however, will be the pawpaw (*Asimina triloba*) grown from seed collected in Accomack County, Virginia by DNPS member Bob Edelen.

Pawpaw is a small shade-tolerant tree that grows to about 25-30 feet in height. It grows in the rich alluvial soils along streams and rivers from New York to Florida and West to the Mississippi River Valley. In this range, it is known by many common names including custard apple, poor man's banana, pawpaw apple, Hoosier apple and white plum; an allusion to the tasty fruit with a taste described as a combination of banana and vanilla custard. Its wide range may in part be due to indigenous American people who valued the fruit and who would take it with them in a dried cake form for sustenance on their hunting and trade expeditions.

Pawpaw is a member of the Custard Apple of Annona family (Annonaceae) which contains mostly tropical species including Cherimoya and Sour sop.

If grown in full sun, the plant develops into a densely conical small tree with pendant leaves. Pawpaw is shade tolerant, although it doesn't bear as many fruit. When grown in light shade it has a more open habit with its leaves extending horizontally from its limbs. When growing naturally, they are often found in the understory of oak and history forests.

The simple pointed obovate leaves are arranged alternately along the stem and are a rich green color above and lighter below. The leaves grow up to a foot in length and are the tree's most ornamental characteristic. The upper surface of the leaf blade is covered with dark brown hairs, while the lower surface features silver hairs adding to the effect. The leaves are quite thin and move in the slightest breeze, enriching this dramatic tropical effect. The leaves are quite aromatic, emitting a sweet pepper aroma if bruised. In autumn, the leaves turn a rich yellow color contrasting with the dark brown bark which is accented with white patches, a characteristic which also adds to the tree's winter interest. Older bark also tends to be furrowed.

The curious solitary cup-shaped flowers are almost two inches wide and appear in late April. They display three prominent pointed sepals surrounding three smaller upright petals that are at first green before developing into a rich velvety red-maroon color.

As the summer progresses, the fruit which resemble a short, fat banana will grow to two and a half to four inches in length. It is the largest of the native North American fruits and is rich in amino acids, the building blocks of proteins, and offers a vitamin content that rivals many citrus fruits. At first a light green in color, it develops into a soft yellow color as it ripens. Large shiny dark brown seeds are dispersed throughout the flesh of the fruit.

The fruit is a favorite of wildlife. Fox, squirrel, opossum and raccoons all consume it. Additionally, the tiger swallowtail feeds exclusively on Pawpaw foliage.

Pawpaw can be grown easily from seed that should be planted in autumn to provide three to four months of cold treatment or stratification. The seed should not be allowed to dry out during germination. The root system tends to be wide spreading and brittle, so they are best grown in deep containers. Seedlings should be transplanted in the spring since larger plants can be difficult to transplant successfully. The plants benefit from organic mulch which should be kept at least three inches from the trunk of the tree to avoid rodent damage in winter.

Pawpaws grow best in an organically rich soil which retains moisture but drains well. They are not tolerant of saturated soils. They are tolerant of hot humid weather and they seem to be fairly frost tolerant. Pawpaws are relatively disease and insect resistant. If grown for fruit, they should be planted in groups, since cross-pollination benefits the setting of fruit.

Don't miss this opportunity to enjoy this fabulous rare native plant in your own garden. For more information, including recipes, check out www.pawpaw.kysu.edu on the web! 🌿

oooo *Quentin Schlieder, DNPS Events Coordinator*

GARDENING WITH NATIVE PLANTS

CARDINAL FLOWER (LOBELIA CARDINALIS)

NATURAL HISTORY

In mid-summer the brilliant scarlet color of the Cardinal Flower flashes from the marshes, stream banks and low woods across the Eastern United States from Southern Canada to Texas. Often called "America's favorite" and "spectacular", its extremely showy blossoms can be recognized at considerable distance. Few native plants have flowers of such intense color as this common herbaceous perennial. The blossoms are delicate, gradually opening from bottom to top in groups of 2 to 8 brilliant crimson flowers. Though a mature *Lobelia cardinalis* may ultimately support over a hundred flowers, the sequential blossoming habit of this spectacular native plant will prolong blooming time from summer into early fall. A moderately tall plant, (2 to 4 Feet) stout and erect, it is a favorite of our ruby-throated hummingbird, numerous butterflies and some bees who oblige as pollinators. The sexual tube of the cardinal flower is at first male, displaying pollen-bearing stamens at the tube tip. Pollinators collect the pollen by brushing their foreheads against the tube tip as they forage for nectar. As the stamens decline, the Y-shaped pistils extend from the tube,

becoming the female and ready to receive pollen from flowers still in the pollen stage.

WHERE TO GROW

Though primarily a wetland plant, *Lobelia cardinalis* is adaptable to a wide range of soil and light conditions. Cardinal flowers can be grown in full sun or shade but probably grow best in filtered light. They can be grown in the water garden under partially submerged conditions in heavy soils along stream and pond banks that are occasionally flooded, or can be grown in a well drained perennial garden if sufficient moisture can be provided and mulch is used to keep the roots moist.

PROPAGATION AND CARE

Lobelia cardinalis will re-seed itself readily. The near microscopic seeds can be collected in the late fall once the seed capsules have thoroughly dried. Seeds may be saved over the winter in an envelope stored in a dry location. In the early spring seeds may be direct seeded into the flowerbed. Do not allow the soil to dry until the plants are well established. Seeds may also be sprinkled onto a rich potting media in a pot of flat (do not cover), and watered from the bottom until seedlings are well established. Once the plants have emerged and formed 2 sets of true leaves, transplant the seedlings into individual pots. Continue to provide ample moisture until a strong root system is established then plant the individual seedlings into the flowerbed, water garden or any natural habitat where sufficient moisture is assured. Seeds planted in the summer form rosettes of foliage in the fall. Be careful to keep leaves and debris from smothering these rosettes.

LORE

Historically, *Lobelia cardinalis* has been used as a medicine and emetic (to induce vomiting). Native Americans used root and leaf teas of the Cardinal Flower for stomachache, fever, headache and colds, to expel worms, soothe the nerves, and cure syphilis and typhoid fever! It contains fourteen alkaloids similar to those in nicotine. Extracts of the leaves and fruit produce vomiting, sweating and pain and some people may have an allergic reaction to the plants sap on the skin. There is no current medicinal use for this plant today. Definitely a plant to enjoy for it's great beauty! 🌿

oooo *Bob Edelen, DNPS Member*

NATIVE PLANT HIGHLIGHT

SPIRANTHES CERNUA

Now that we are late in the growing season, this issues native plant highlight is dedicated to the showy fall-bloomer, *Spiranthes cernua*, nodding ladies'-tresses.

Spiranthes cernua is a perennial orchid that flowers in Delaware from September to October. It typically occurs in large colonies and is usually found growing in poorly drained acidic, peaty soils. It prefers full sun and is often found in bog-like habitat that can occur in open swamps, power-lines, abandoned sandpits, and ditches. The species can be found in both physiographic provinces of the State, but is most prevalent on the Coastal Plain. Overall, the species ranges over the eastern half of the United States and Canada.

Spiranthes cernua has fibrous, fleshy roots and the

stem bears several lanceolate basal leaves. The stem is slender to stout and can be as tall as one meter in height. The floral spike consists of a tightly twisted, spiral row of many flowers that resembles braided hair. The white tubular flowers, which are pollinated by bees, often have a yellowish center and bloom from the bottom up.

The specific epithet, *cernua* is from the Latin *cernuus*, meaning "faced to the ground" or "inclined forward," which refers to the nodding position of a flower.

The genus *Spiranthes* is represented in Delaware by six species: *Spiranthes lacera* var. *gracilis* (southern slender ladies'-tresses, uncommon in Delaware), *S. lucida* [shining ladies'-tresses, historical in Delaware (not seen for 20 or more years)], *S. praecox* (glass-leaf ladies'-tresses, historical), *S. tuberosa* (little ladies'-tresses, historical), *S. vernalis* (twisted ladies'-tresses, uncom- mon).

oooo William McAvoy, Acting President



Douglas Ladd @ USDA-NRCS PLANTS Database / USDA SCS. 1989. *Midwest wetland flora: Field office illustrated guide to plant species*. Midwest National Technical Center, Lincoln, NE.

RESOURCES AND REVIEWS

CLAUDE E. PHILLIPS PUBLICATIONS

Claude Phillips has the honor of having the Herbarium at Delaware State University named after him. All his publications are out of print but are available at Delaware libraries and the Claude E. Phillips Herbarium. *Wildflowers of Delaware and the Eastern Shore* published in 1978 by the Delaware Nature Education Society (now the Delaware Nature Society) is his most important work complete with color pictures. The color slides from his book are at the Herbarium. The book is useful as a guide to finding Delaware flowers and their location by county. The author does not differentiate native from non-native flowers. Phillips devised his own plant key, which does not have the ease of Newcomb or Peterson. His criterion for inclusion "omits species with drab or inconspicuous flowers". This excludes plants such as false nettle (*Boehmeria cylindrica*) and dog fennel (*Eupatorium capillifolium*).

Phillips' booklets include *Trees of Delaware and the Eastern Shore: a guide to their identification in winter*, 1975. There is a limited supply of this booklet still available at the Herbarium for \$2.00, \$5.00 postage paid. Call the Herbarium at 302.857.6452. Winter identification is challenging and I prefer the *Woody Vines, Shrubs & Trees: a guide to their identification in summer* which I find easy to use and again useful because it has a Delaware orientation, identifying county locations. There is an added benefit with the addition of vines and shrubs. *An Illustrated Key to Common Grasses of Delaware and the Eastern Shore*, 1980, *Some Grasses of the Northeast: a key to their identification by vegetative characters*, 1962, *Weeds of the Northeast: aids to their identification by basal-leaf characteristics*, by Phillips and V.J. Fisher, and a handwritten booklet (making it difficult to read), *Ferns of Delaware and the Eastern Shore*, 1980, round out the Phillips' publications. These last four are primarily keys with no locations. Claude E. Phillips has made a major contribution in writing a Delaware guidebook and other publications about Delaware plants.

oooo Gwendolyn Elliott, DNPS Member

THOUGHTS FROM THE EDGE OF THE GARDEN DNPS NURSERY UPDATE

The recent work days we've had to prepare the nursery for the November plant sale have been quite successful. We weeded, took down fencing around the beds and have continued to repot plants. The nursery looks good right now and there will be continuing grounds maintenance projects during the winter. And recently, members Bob Edelen and Eric Zuelke paid a visit to a local nursery in Sussex County to learn about watering systems, and ways to overwinter plants using protection cloth.

REFORESTATION PROJECTS UPDATE

As we are nearing the end of our work season for 2004, we have 391 hours worth of volunteer time, and have installed a total of 1951 tree tubes around seedlings at the Prime Hook Refuge, Cedar Creek, and Blackbird sites. We greatly appreciate everyone who came out to help with this important project and these sites are well on their way to becoming vital forests for our state.

SOCIETY NEEDS YOUR HELP TO MAKE IT MORE RESPONSIVE

Please take a few minutes to complete and return the enclosed survey. Your responses will help us to identify what programs and activities you would like to see offered, what days and times are best for your schedule, what meeting places are most convenient for the majority of members, what services and benefits currently offered by the Society you find most important, and what projects programs and benefits you would like to add. Additionally, please let us know if you can assist the Society as a volunteer or officer.

Your participation is very important to us; we want to know what you are thinking. Please invest a few minutes of your time to tell us what we are doing that you like, and what we should be doing to make the Society more responsive to your needs. Thank you.

4th Annual Native Plant Sale

When: Saturday, 6 November 2004, 10:00 AM – 3:00 PM

Where: DE Native Plant Society's native plant nursery. Directions: St. Jones Reserve, take Route 1/Route 113 to just south of the Dover Air Force Base to the Route 9/Kitts Hummock Rd. intersection; go east on Kitts Hummock Road about 1 mile to the entrance of the St. Jones Reserve (located right next to the John Dickinson Mansion).

What's for sale: Hundreds of trees (oaks, hickories, pawpaw, persimmon, boxelder), shrubs (chokeberry, inkberry, pepperbush, viburnum, magnolia, swamp rosemallow), and many native herbaceous species will be available at very reasonable prices.

Come early, some quantities are limited!

For more information: Call 302.376.5416, email wmcavoy@delawarenativeplants.org, or on the web at www.delawarenativeplants.org.

We had a great sale last year and hope to have an equally great sale this year. So come out and join the fun!



UPCOMING EVENTS

SATURDAY, 06 NOVEMBER 2004 – FOURTH ANNUAL DE NATIVE PLANT SOCIETY NATIVE PLANT SALE.

SATURDAY, 13 NOVEMBER 2004 – SECOND ANNUAL FALL FAMILY FESTIVAL AT ADKINS ARBORETUM. ACTIVITIES INCLUDE HAYRIDES, WALKS THROUGH THE ARBORETUM WOODS, MUSIC, AND AN ARRAY OF LUNCHTIME TREATS. A VARIETY OF ACTIVITIES FOR CHILDREN WILL INCLUDE MAKING NATURAL HOLIDAY ORNAMENTS, PLANTING PUMPKINS, MAKING BIRDFEEDERS, LEAF PRINTMAKING, AND FACE PAINTING. PARTICIPANTS CAN ALSO PLACE ORDERS FOR HOLIDAY WREATHS MADE FROM FRESHLY CUT LOCAL GREENS THAT WILL BE DELIVERED AT THE ARBORETUM'S HOLIDAY GREENS SALE. CALL 410.634.2847 FOR MORE INFORMATION, OR TO REGISTER BY PHONE, OR ON THE WEB AT [HTTP://WWW.ADKINSARBORETUM.ORG](http://www.adkinsarboretum.org).

SUNDAY, 14 NOVEMBER 2004 – LECTURE-PENNSYLVANIA TREES: A NATURAL HISTORY AT 2 PM AT MORRIS ARBORETUM. THIS LECTURE IS PART OF THE KLEIN ENDOWED LECTURE SERIES AND IS FREE TO MEMBERS AND \$5 FOR NONMEMBERS. RESERVATIONS ARE REQUIRED AND SPACE IS EXTREMELY LIMITED. FOR MORE INFORMATION, CALL 215.247.5777 EXT 169, OR ON THE WEB AT [HTTP://WWW.BUSINESS-SERVICES.UPENN.EDU/ARBORETUM/NOVEMBEREVENTS042.HTML](http://www.business-services.upenn.edu/arboretum/novemberevents042.html).

SATURDAY, 20 NOVEMBER 2004 – KNOWING NATIVE PLANTS: WINTER BOTANY-SEED STUDY AT BOWMAN'S HILL WILDFLOWER PRESERVE. FOR MORE INFORMATION CALL 215.862.2924, OR ON THE WEB AT [HTTP://WWW.BHWP.ORG/INDEX.PHP](http://www.bhwp.org/index.php).

DNPS BI-MONTHLY MEETINGS FOR 2004 – ARE CURRENTLY SCHEDULED THE 3RD TUESDAY OF EVERY OTHER MONTH. OUR NEXT MEETINGS WILL BE: 16 NOVEMBER. MEETINGS WILL TAKE PLACE (UNLESS OTHERWISE NOTIFIED) AT 7 PM AT THE ST. JONES RESERVE, 818 KITTS HUMMOCK RD. ABOUT 3/4 MILE EAST OF THE RT. 9/113/ KITTS HUMMOCK ROAD INTERCHANGE JUST AT THE SOUTHERN EDGE OF DOVER AIR FORCE BASE. WE PLAN TO HAVE GUEST SPEAKERS AT EACH MEETING (SPEAKERS AND THEIR TOPICS WILL BE ANNOUNCED AT LATER DATES). CHECK OUR WEBSITE FOR ADDITIONAL DETAILS OR EMAIL US AT [DNPS@DELAWARENATIVEPLANTS.ORG](mailto:dnps@delawarenativeplants.org).

OUR BI-MONTHLY MEETING ON 16 NOV 2004 WILL FEATURE A PRESENTATION BY CHRIS BENNETT OF THE DE NATURAL AREAS PROGRAM, DNREC, DIV. OF PARKS AND RECREATION. CHRIS WILL BE SPEAKING ABOUT THE UNIQUE PLANT COMMUNITIES OF THE DE PARK SYSTEM.

Membership Application

DELAWARE NATIVE PLANT SOCIETY

Member Information

Name:

Business Name or Organization:

Address:

City and Zip Code:

Telephone (home/work):

E-mail address:

- Full-time Student \$10.00
- Individual \$15.00
- Family or Household \$18.00
- Contributing \$50.00
- Business \$100.00
- Lifetime \$500.00
- Donations are also welcome \$ _____

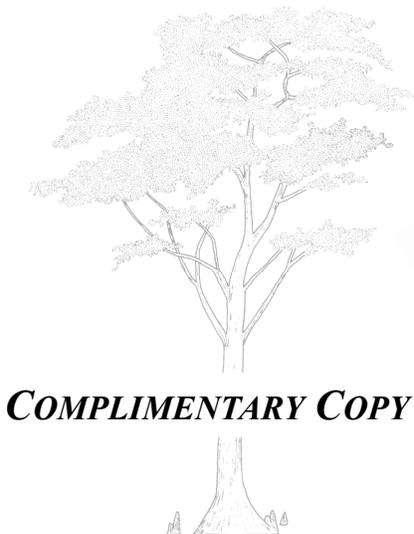
Membership benefits include:

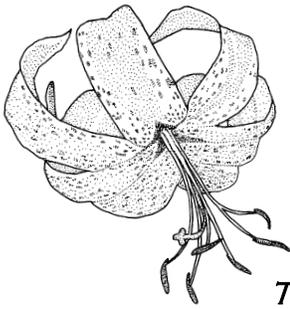
- * The DNPS quarterly newsletter, *The Turk's Cap*
- * Native plant gardening and landscaping information
- * Speakers, field trips, native plant nursery and sales

Total Amount Enclosed: \$

**Make check payable to:
DE Native Plant Society
P.O. Box 369, Dover, DE 19903**

**DELAWARE NATIVE PLANT SOCIETY
P.O. BOX 369
DOVER, DELAWARE 19903**





The Turk's Cap

THE NEWSLETTER OF THE DELAWARE NATIVE PLANT SOCIETY WINTER 2004/05

IN THIS ISSUE

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○ *Feature Article*
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○ *Resources and Reviews*
○ *Thoughts From The Edge... continued*
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HOW CAN I GET INVOLVED?

The Delaware Native Plant Society is open to everyone ranging from the novice gardener to the professional botanist. One of the primary goals of the society is to involve as many individuals as possible.

The DNPS is working on some significant projects at this time. We completed several reforestation projects, using a "direct-seeding" approach at Prime Hook National Wildlife Refuge, and along Blackbird and Cedar Creeks in October and November, 2003. In addition, help is needed with our native plant nursery at the St. Jones Reserve with the monitoring and watering of plants in our greenhouse.

For more information on how to get involved, E-mail us at dnpd@delawarenativeplants.org, or visit our website -www.delawarenativeplants.org. Our website will have all of the past issues of *The Turk's Cap* along with a large section on native plants, as well as links to other environmental and plant related organiza-

A CALL FOR ARTICLES

If you would like to write an article for The Turk's Cap, we would love to print it. With like minded individuals as an audience, The Turk's Cap is a great venue for plant or habitat oriented writings.

We'll take just about anything from gardening tips to book reviews to poetry. Of course, it has to be about native plants, or issues related to native plants; just a minor constraint. Your imagination is the real key.

Contact Eric Zuelke (ezuelke@juno.com), or Bill McAvoy at 302.376.5416 for more information.

A MUG OF HOT TEA WARMING YOUR FINGERTIPS WELCOME TO OUR NEWEST MEMBERS

October through December

Chet & Mary Ann Boggs
Lynda Dunham
Peter & Lois Gebrian
Sandra Otton

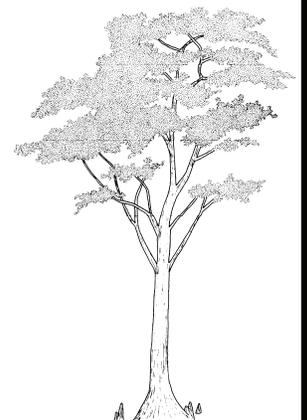
LETTER FROM THE PRESIDENT

I hope all of you enjoyed the holidays and hope your New Year has gotten off to a good start. Speaking of good starts, the Delaware Native Plant Society is off and flying, being propelled by the energy created from our annual plant sale in November. We had an excellent day, one of our best. We had many customers, sold lots of plants, and gained several new members. The results from that day are summarized here in the Newsletter and the numbers show that this event is very important to the Society. It not only adds to our treasury and provides a way to gain new members, but more importantly, it gives us a chance to promote the use of native plants and to educate on the value of our native flora. For the future, we have plans to improve the efficiency and productivity of the nursery, as well as plans to improve the plant sale itself. Without naming names, I'd like to offer deep and sincere thanks to all the members who volunteered their time the day of the plant sale, as well the days leading up to the plant sale. Without your

Continued on page 3

The DNPS Vision

The purpose of the Delaware Native Plant Society (DNPS) is to participate in and encourage the preservation, conservation, restoration, and propagation of Delaware's native plants and plant communities. The Society provides information to government officials, business people, educators, and the general public on the protection, management, and restoration of native plant ecosystems. The DNPS encourages the use of native plants in the landscape by homeowners, businesses, and local and state governments through an on-going distribution of information and knowledge by various means that includes periodic publications, symposia, conferences, workshops, field trips, and a growing statewide membership organized by the DNPS.



LETTER FROM THE EDITOR

FORGING AHEAD

I hope everyone had a good Christmas, and Happy New Year! I like this time of year because it's a time of reflection of all that went well and all that went badly over the past year. We did the same as a group a few weeks ago when we had our meeting to go over the plant sale results. We had some great successes this year, and though we don't feel that anything went poorly, we knew there was room for enhancement and improvement. The way we figured out what to improve was through the survey we sent out this past November and those results gave us some great ideas on how to give certain things we do a facelift and look at them from a different perspective. We really appreciate all who answered the survey. The results are in this issue and we hope the changes we make based on your comments make our Society even better, and enable more of you to be more involved.

The plant sale this year was our best yet, and I've got all the stats right here, along with our annual financial report as well; the Society did very well this year financially. I'd also like to heartily thanks those individuals who donated plants to the plant sale this year. Also right here are two very informative articles on river birch, and Christmas fern, and for those of you already thinking of this years garden and how to deal with those ever present, ever persistent, pesky deer, an informative article on how to keep the deer out!

One of our regular columnists will be making her last appearance in this issue. Gwendolyn Elliott, who has been writing book reviews for the Resources and Reviews column, will be stepping down from her post. I've enjoyed her book reviews and I hope everyone found them useful and informative. This column will live on however, and if anyone out there would like to contribute any kind of literature resources or book or magazine reviews, I'd love to hear from you.

I hope everyone enjoys the rest of winter (though it's being quite mild this year so far), and if we ever get any snow, make sure you get out and have a good snow ball fight. 🐰

oooo Eric Zuelke, Editor

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NATIVE PLANT TREKS

BOMBAY HOOK NATIONAL WILDLIFE REFUGE

This issues natural area departs from the states park system to one of our two national wildlife refuges. The US Department of Interior began the national wildlife refuge system just over 100 years ago under the principal of providing refuges and breeding/resting/feeding grounds for migrating birds and other wildlife, and Bombay Hook National Wildlife Refuge (BHNWR) has been doing a good job of upholding this principal since its creation in March 1937 as a link in the chain of refuges that extends from Canada to the Gulf of Mexico

The refuge started out as a small hunk of wetlands and forest and has grown over the years to 15,978 acres, approximately four-fifths of which is tidal salt marsh. The remaining acreage is impounded fresh water pools, brushy and forested swamps, forested and grassy upland, and agricultural lands. The main focus of this refuge is as a breeding ground for birds, but in the process has preserved some very nice habitat for numerous species of Delaware's native plants. It even has a small

piedmont rich woods habitat that has quite a collection of unique plants that only exist in this type of habitat. Some of the interesting plants you may encounter in the rich woods habitats of BHNWR are *Galearis spectabilis* (showy orchis), *Laportea canadensis* (wood nettle), *Ophioglossum vulgatum* (southern adder's-tongue), and *Passiflora lutea* (yellow passion-flower) which is actually a vine and has a beautiful, yet subtle whitish-yellow flower. And in the very interesting fresh water marsh habitats you may be lucky enough to run across *Limnobium spongia* (American frog's-bit).

The Friends of Bombay Hook group created a garden of native plants near the visitors center in 2000 and it is now managed by a group called The Garden Keepers. Some of the featured plants in their garden are *Diospyros virginiana* (persimmon), *Aclepias tuberosa* (butterflyweed), *Impatiens capensis* (jewelweed), *Ilex verticillata* (winterberry holly), and many ferns.

If you would like to learn more about the BHNWR visit their website at <http://bombayhook.fws.gov/>. 🐰

oooo Eric Zuelke, Editor

o o o o o o o

EVENT HIGHLIGHT

4TH ANNUAL NATIVE PLANT SALE, SATURDAY, NOVEMBER 6

The plant sale this year was a huge success; our best yet! We had excellent weather and some terrific food. I want to thank all of you who brought the spiced apple cider, apple cheese crumb bars, doughnuts, and banana bread.

We did \$1859.00 in sales, sold 1081 plants (from an inventory of 1700 plants of 69 species), and had 96 customers. That's more money than we've ever made, and more plants of more species than we've ever had! Our record inventory would not have been possible without the generous donations of plants and effort from three regional nurseries. Thanks!

Below is a table of data to show how our plant sales have grown from year to year for those of you who get a kick out of tables, and data analysis, and that kinda stuff.

# of \ Year	2002	2003	2004
Species available	56	64	69
Plants available	550	1562	1700
Plants sold	512	817	1081
Customers	107	120	96
Booklets sold	11	9	1
Checklists sold	3	1	3



© Rick Mickowski

LETTER FROM THE PRESIDENT*Continued from page 1*

help, this event could never even get off the ground in the first place, but your assistance really enables it to go above and beyond and be truly successful.

In this issue you will find an article by Quentin Schlieder where he summarizes a member survey that he drafted and sent to all our members. Quentin analyzes the survey and presents the results. The response to the survey should help us to make the Society more responsive to its member's interests, and we thank Quentin for all his work with this effort.

I am excited about the direction the Society is taking and I believe the New Year will prove to be successful. So let's take advantage of the energy generated from our plant sale to carry us forward and I hope to see you all at upcoming meetings and certainly at our annual meeting in May. 🍀

All the best in the New Year,
William McAvoy

4TH ANNUAL NATIVE PLANT SALE, SATURDAY, NOVEMBER 6

© Bob Edelen



© Rick Mickowski



© Bob Edelen

NATURAL QUOTES

"Nature does not hurry, yet everything is accomplished."

Lau Tzu

FEATURE ARTICLE**GARDENING WITH (AND WITHOUT) DEER**

(Editor's note: Reprinted with permission from the online magazine Organicgardening.com. Article can be found at <http://www.organicgardening.com/feature/0,7518,s1-5-22-216,00.html>).

Standing at the kitchen sink, up to your elbows in dish suds, you gaze out over your garden, lost in happy thoughts of luscious tomatoes, fragrant roses, spicy basil, and colorful tulips. Then you spot them. Four deer, gliding out of the woods toward your garden. Suddenly, your image of a bountiful garden is reduced to nothing but nibbled stalks and a bed punctuated by sharp hooves.

These graceful marauders are an increasing nuisance as suburban sprawl encroaches on their natural habitat. While beautiful to behold from a distance, deer can turn into monstrous pests in your garden or orchard. Is there a way to coexist with them peacefully without sacrificing your garden? Yes, there is hope!

The first thing to keep in mind is that each region may be different, so what works well in other places may not work for you and vice versa. That's why it is important to start by talking with other gardeners in your area and see what has and has not been effective for them.

Nicole Lemieux and Brian Maynard of the Sustainable Landscapes Program in the Department of Plant Sciences at the University of Rhode Island, suggest gardeners consider the following questions that will help identify the best deer control strategies for their needs:

- How much damage are the deer inflicting on your garden?
- How much damage can you tolerate?
- How much money are you willing to spend on controls?
- Are aesthetics very important to you or are you willing to try anything to preserve your garden?

What are your short term and long term goals? For example, do you want to protect only your asparagus crop or tulip bulbs, or do you want to keep deer out of your yard entirely?

Your answers to these questions will prepare you to decide on a suitable plan of attack.

The next step is to thoroughly analyze your site. What sort of damage do you have? What plants are being eaten? Where do the deer come from and when do they show up? Remember, each herd is unique in its browsing habits. Devise a strategy

The solution, notes Lemieux and Maynard, may be as simple as relocating particularly choice plants to a central location and then using a variety of tactics to protect them. Or

Continued on page 6

GARDENING WITH NATIVE PLANTS**RIVER BIRCH (*BETULA NIGRA*)****NATURAL HISTORY**

As fall gives up its last late season flowers and winter grasps Delaware in its frigid grasp, look to the swamps and wetlands for the beauty of the river birch. This southernmost birch of the United States can be found alongside bodies of water or in occasionally flooded bottomlands in the Atlantic coastal states, southern states, the lower Midwest, eastern Great Plains, and lower Mississippi River valley. The beauty of the river birch lies in its bark, which is especially attractive in the winter after its leaves have fallen. The bark is smooth on very young trees, but as the river birch ages the bark begins to peel revealing hues of green to yellow to salmon to rust colors to brighten the often dull landscape of winter. Separate male and female flowers are borne on the same tree. Like other Birches, the dormant catkins (male flowers) of River Birch hang on the bare twigs in winter, and then begin to swell in late winter and early spring with the advent of warmer weather. The male catkins are formed near the end of the twig and can be 2 to 3 inches long. The female catkins emerging in early spring between the leaf axils are upright ¼ to ½ inch long and give way in spring to cone-like fruits 1 to 1 ½ inches long covered with hairy scales. These fruit contain many small nutlets that shed in late spring to early summer. The river birch is a fast growing (30 to 40 feet over a 20-year period) medium sized tree, attaining a height of 30 to 50 feet and diameter of 1 to 2 feet at maturity. The trunk generally divides early into several arching branches making great cover for nesting songbirds.

WHERE TO GROW

River birch is a very handsome tree for estates, parks, golf courses and any other large areas, and is widely planted throughout the United States both for its ornamental value and as a shade tree. In the wild, river birch is primarily a wetland plant, and prefers moist to wet, rich, deep acidic soils, however with proper care, it is adaptable to a wide variety of soil and light conditions. It prefers partial shade, but is very heat tolerant and will tolerate full sun quite well. Since the river birch thrives on sterile soils and has an extensive root system, it is quite attractive for erosion prevention.

PROPAGATION AND CARE

Propagation of the river birch can be accomplished either by seed or soft wood cuttings. Seeds are best sown as soon as they are ripe (early to mid June) in a bright location or cold frame. Seed should only be covered to a depth of the seed itself – any deeper will hinder germination. When they are large enough to handle, divide the seedlings out into individual pots and grow them in a cold frame for at least their first winter – preferably two. Plant them out into their permanent positions in late spring or early summer, after the last expected frosts. To propagate from cutting, timing is of the essence! Take cuttings 6 to 8 inches long from the current seasons growth, while still in active growth. Apply a rooting hormone, place in a peat sand mixture and mist heavily until frost. Leave the plants undisturbed through the first winter and plant out in early spring after danger of frost. Young trees should be kept thoroughly watered until well established and even well established trees will benefit from additional water during times of drought to avoid leaf

drop. Although the river birch is resistant to the bronze birch borer which plagues the birches of colder climates, it is a favorite host plant to numerous butterfly and moth species, so young plants should be monitored in summer for excessive caterpillar presence.

LORE

A salve was made by boiling the buds until they were thick and pasty, then sulphur was added and the resulting salve was applied externally to skin sores and ringworm. ❧

◦◦◦◦ Bob Edelen, DNPS Member

**NATIVE PLANT HIGHLIGHT****CHRISTMAS FERN (*POLYSTICHUM ACROSTICHOIDES*)**

While the Christmas holiday is still fresh in our minds, let's discuss the Christmas fern, (*Polystichum acrostichoides*). The common name likely reflects the fact that the species is evergreen and still appears fresh throughout the winter, which includes the time of Christmas.

Christmas fern is a woodland species preferring moist, rich organic soils. The species is most common in the Piedmont province of Delaware, becoming rare further south as the soils become more acid and sandy. On the Coastal Plain in Delaware, Christmas fern is usually found in a habitat called a "rich wood." Here the soils are more organic and not as acidic as most Coastal Plain soils, as a result Christmas fern and other species typical of the Piedmont often become established.

Within the genus *Polystichum*, there are 180 species worldwide, with 15 occurring in North America. In Delaware, we have just the one species, *P. acrostichoides*. The overall distribution of *Polystichum acrostichoides* in North America is from Nova Scotia, south to Florida, west to Texas, and north to Minnesota.

The leaf morphology of Christmas fern can be variable and many forms have been recognized. In addition, hybrids

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THOUGHTS FROM THE EDGE OF THE GARDEN

MEMBERSHIP SURVEY RESULTS

There was a good response to the survey mailed with the Autumn 2004 issue of *The Turk's Cap* and the responses will be of significant benefit in planning future programs and making the Delaware Native Plant Society more responsive to its members. Out of 126 surveys sent out, we received 35 responses (28%).

It was reassuring that in general respondents to the survey were satisfied with the benefits they receive as members in the Society. They were especially enthusiastic about both *The Turk's Cap Newsletter* and the Annual Plant Sale. While most respondents felt the website was adequate, a few commented that they would like to see it enhanced and updated on a regular basis.

With respect to their reasons for joining the Society, most replied that they joined to learn more about gardening with native plants and to receive the newsletter. There also was strong interest in restoring the State's degrade habitats, to participate in bimonthly programs, occasion field trips and the Society's Annual Plant Sale.

Under the "Activities" section of the survey, respondents expressed the strongest interest in programs about the flora of Delaware and field trips to see and experience native habitats in the State. Workshops on plant identification, native plant propagation and visits to both private and public gardens featuring native plants and programs about native plants of Eastern North America and how to grow them scored very high while there was moderate interest in habitat restoration and nursery maintenance. There was very little interest in social activities like a picnic or holiday party.

Members prefer meetings on late mornings and early afternoons on Saturdays followed by the same times on Sundays. There was no interest in meetings on either Monday or Friday evenings and little interest in other weekday evenings. Most members expressed a preference for activities in March, April, May, June, July, September, October, and November, with March, June, and November being favored most.

Kent County was the most popular venue for meetings followed by New Castle and the Sussex Counties, but it appears that many members have no preference if the activity is on the weekends in late morning or early afternoon. Apparently driving to evening meetings for a one hour program is not preferred over a more substantive activity on the weekend.

While several locations for meetings were offered, the Center at St. Jones Reserve where most meetings and the Annual Plant Sale are currently held is the most convenient for respondents.

Almost all respondents indicated that they feel they receive good value in exchange for the dues they pay and that the current level of benefits is adequate, however, there was interest in preference for members at the plant sale, a seed fund, an annual plant dividend at the Annual Meeting and the ability to pay dues for three years at a discount. At the December 9th Board Meeting it was decided to present these suggestion to the membership at the Annual Meeting on May 7, 2005 for their formal consideration.

The Survey reinforced the importance of a personal introduction to the Society through a friend, although newspaper articles, the membership brochure and the website also were cited as significant ways that members learned about the Soci-

ety and eventually joined it.

There was an overwhelming response that members were willing to recommend membership in the Delaware Native Plant Society to a friend, but only one respondent was willing to share a name and address to which information about the Society could be sent.

There was a gratifying response that members were willing to grow plants to contribute to the plant sale at home, to participate in the maintenance of the nursery and to serve on a Committee. There also was some interest in presenting programs and writing an article for *The Turk's Cap*. Contact information has been provided to Chairs of the various Committees and hopefully those who wished to assist the Society will be contacted at the appropriate time. *Editors Note: I will soon be contacting those members individually who expressed interest in writing articles, working in the nursery, growing plants, and serving on committees. I look forward to working with each of you on specific projects.*

Most of the programs and activities through July have been confirmed, but the responses to the survey will shape future program and activity proposals. I would like to thank all the members who took time to respond to the survey. If you have other suggestions, concerns or interests, please feel free to call me at 302.653.6449 or to email me at qcsjr@comcast.net. Members who wish to have a summary of the responses may request one by sending a postpaid reply envelope to Quentin Schlieder, 36 South Main Street, Smyrna DE 19977-1431. Hopefully, your responses will allow the Society to be more responsive to your interests and needs. 🌿

◦◦◦◦ *Quentin Schlieder, DNPS Member*

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NATIVE PLANT HIGHLIGHT

Continued from page 4

are often encountered when two different species are present in the same habitat. The fronds, or leaves are evergreen and leathery in texture, and are lanceolate in shape. The pinnae, or leaflets have a basal lobe on the upper side, and the margins of the pinnae are sharply serrate. The fronds of Christmas fern are dimorphic, meaning the fronds occur in two forms, as a sterile frond and a fertile frond. The fertile frond contains fuzzy, chestnut brown sori (structures that contain spore producing organs) that appear on the back of the pinnae.

Christmas fern is an attractive plant that is easy to cultivate in a woodland garden, or shady corner of your home. 🌿

◦◦◦◦ *William McAvoy, Acting President*



Polystichum acrostichoides (Christmas fern)

J.S. Peterson @ USDA-NRCS PLANTS Database

FEATURE ARTICLE*Continued from page 3*

maybe you want to plant substitutions that are less attractive to the deer.

The truth is, the most reliable way to keep deer out of your garden is an 8 to 10 feet tall fence. Deer are remarkable jumpers and will usually clear anything lower with relative ease. Your fence can be constructed from any of a variety of materials including chain link, electrical wire or tape, and plastic mesh.

While deer are good at clearing high obstacles they are reluctant to try jumping wide obstacles. That's why they won't even attempt to jump a slanted wire fence—at least 36 inches tall on the outside and slopes inward to a width of 69 inches—will prove too daunting a barrier. [To find a dealer near you that sells this type of fencing, contact Gallagher Power Fence, Inc., (800) 531-5908, or go to gallagherusa.com.]

Of course, fencing is expensive and usually not appealing for an ornamental garden. If you find fencing to be either financially or aesthetically impractical, you can buy commercially made deer repellents or try one or several of the following alternatives.

You might try spraying your plants with a foul smelling and tasting repellent. You can make such a spray at home using this formula, recommended by The Experts Book of Garden Hints. In a blender, combine 2 or 3 eggs and 1 quart of water. Then pour the mixture into a container with enough additional water to make 1 gallon. Sprayed on plants, the eggs in the solution turn rotten and give off an aroma that's mercifully subtle to humans but repulsive enough to deer to make them look elsewhere for a meal.

Soap ornaments are not exactly attractive, but studies have consistently shown that soap repels deer, according to The Experts Book of Garden Hints. In fact, bars of soap hung on tree branches proved more effective than many commercial chemical repellents. You don't even have to unwrap the soap: Field studies in New England apple orchards showed that soap bars hung with their wrappers intact provide better protection from deer than the soap or the wrappers alone.

Since deer do not like the smell of humans, you can try gathering human hair (the local barber shop is a good source) and hanging it in mesh bags from your trees or from stakes around your garden. Some gardeners find this is enough to keep deer at a safe distance.

The effectiveness of any deterrent comes down to how hungry the deer are, notes Dean Pettis, a horticulture specialist at the University of Minnesota and a Master Gardener. He suggests that you experiment with a variety of repellents to determine what works with the herd coming to your garden.

After Pettis tried numerous repellents in his own garden to no avail, he resorted to the most...um...primitive method of protecting his plants. He went out one night and marked his territory the old fashioned way. This tactic did work for Pettis, but he admits that this may cause other problems for gardeners who live in close proximity to their neighbors. But maybe if a whole neighborhood did this together, there's no telling how the deer would react... 

RESOURCES AND REVIEWS**DELAWARE'S OUTSTANDING AREAS AND THEIR PRESERVATION**
BY LORRAINE FLEMING

My book reviews of Delaware flora will end with a 1978 book on Delaware natural areas. This book describes key elements which make the areas unique such as flora, geology, or water. In one appendix there is a tabulation of profiles of woody species in selected natural areas. This is helpful for learning about what trees and shrubs are found in areas throughout Delaware from Pea Patch Heronry, to the Norman G. Wilder Wildlife area, to Cape Henlopen. Another appendix tabulates ferns and fern allies observed in New Castle County natural areas.

In a 2003 article in *Outdoor Delaware*, Lorraine Fleming reflects on the fate of the 101 areas listed in her book. After 25 years she notes that four of the original natural areas containing about 400 acres have been lost which is not a bad record considering Delaware's increase in population. The author also notes that since 1978 "it is widely understood scientifically that isolated, or fragmented, ecological units are not viable over the long term." Consequently, the original inventory of the 101 areas which contained about 55,000 acres has been expanded to almost 100,000 acres. Today about half of this acreage is in conservation ownership.

Delaware's Outstanding Areas and Their Preservation is out of print but is available in public libraries and from

 www.bookfinder.com.

oooo Gwendolyn Elliott, DNPS Member

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THOUGHTS FROM THE EDGE OF THE GARDEN*Continued from page 5***PROPOSED 2005 NURSERY ACTIVITIES**

If you are interested in volunteering in the nursery this year, here are some of the activities we have planned. We will be having at least one work day per month and I'm going to try and schedule them according to your responses on the membership survey.

- o Installation of green vinyl coated hardware cloth along the perimeter fence for animal control
- o Construction of a PVC pipe watering system for each bed
- o Design and construction of another shade house
- o Mulching over small grassy areas to reduce the amount of grass to be mowed
- o And lots and lots of potting up of new plants and mulching in the pots to reduce weeding needs

There will be many opportunities to get dirty this season, and if you want to come out, but can only come at a certain time, just get a hold of me and I'll schedule a work day or two around your schedule.

Also, remember that volunteers can come anytime you want to do basic tasks like watering and weeding; no one has to be present. I just ask that everyone fills out the volunteer log book in the greenhouse, so I can keep track of time spent and what was done. 

oooo Eric Zuelke, Nursery Manager

UPCOMING EVENTS

FEBRUARY, MARCH, AND APRIL 2005 – ADKINS ARBORETUM HAS A SLEW OF VERY INTERESTING PROGRAMS AND EVENTS GOING THIS WINTER AND EARLY SPRING (TOO MANY TO LIST INDIVIDUALLY). FOR MORE DETAILS CONTACT THE ARBORETUM AT 410.634.2847, OR ON THE WEB AT WWW.ADKINSARBORETUM.ORG.

FEBRUARY, MARCH, AND APRIL 2005 – THE MARYLAND NATIVE PLANT SOCIETY ALSO HAS A SLEW OF VERY INTERESTING FIELD TRIPS THIS WINTER AND EARLY SPRING (TOO MANY TO LIST INDIVIDUALLY). FOR MORE DETAILS CONTACT THE MNPS AT FIELDTRIPS@MDFLORA.ORG, OR ON THE WEB AT [HTTP://WWW.MDFLORA.ORG](http://WWW.MDFLORA.ORG)

SATURDAY, 12 FEBRUARY 2005 – PROPAGATING NATIVE PLANTS FROM SEED WORKSHOP. FROM 10 AM TO 12 NOON AT THE ST. JONES RESERVE. GROWING NATIVE PLANTS FROM SEED IS REWARDING IF YOU KNOW THE TECHNIQUES WHICH HELP TO ASSURE SUCCESS. THE WORKSHOP WILL BE LED BY QUENTIN SCHLIEDER, FORMER DIRECTOR OF THE WILLOWOOD ARBORETUM AND A FOUNDING MEMBER OF THE NATIVE PLANT SOCIETY OF NEW JERSEY, AS HE EXPLAINS TECHNIQUE LIKE STRATIFICATION AND SCARIFICATION AND WHY THEY ARE REQUIRED TO ACHIEVE GERMINATION OF SOME SPECIES. YOU'LL ALSO PLANT SEED OF NATIVE PLANTS TO GROW AND ENJOY AT HOME. PRE-REGISTRATION IS REQUIRED AND IS LIMITED TO 20. PHONE 302.653.6449 TO REGISTER.

TUESDAY, 15 MARCH 2005 – DNPS BIMONTHLY MEETING AND PROGRAM ON THE LOST PLANTS OF DELAWARE. WILLIAM MCAVOY, PRESIDENT OF THE DELAWARE NATIVE PLANT SOCIETY, AND STATE BOTANIST WITH THE DELAWARE NATURAL HERITAGE PROGRAM WILL DISCUSS THE NATIVE PLANTS WHICH ONCE GREW IN DELAWARE AND ARE NOW LOST. IT'S THE IDES OF MARCH, WHAT COULD BE MORE APPROPRIATE!

SATURDAY, 16 APRIL 2005 – THIS DOVER AREA FIELD TRIP FROM 10 AM TO 2 PM TO THE GARDEN OF DR. JAMES MCCLEMENTS, THE CLAUDE A. PHILLIPS HERBARIUM AT DELAWARE STATE UNIVERSITY WITH DR. SUSAN YOST, AND DELAWARE STATE UNIVERSITY'S WOODLAND TRAIL OFFERS SOMETHING FOR EVERYONE FROM A BEAUTIFUL AND DIVERSE PRIVATE GARDEN TO ONE OF THE NATION'S GREATEST HERBARIUMS. DIRECTIONS AND ADDITIONAL INFORMATION WILL BE SENT ON REQUEST BY E-MAIL AT QCSJR@COMCAST.NET OR BY PHONE AT 302.653.6449.

MAY 2005 – DE NATIVE PLANT SOCIETY ANNUAL MEETING AT BOMBAY HOOK NATIONAL WILDLIFE REFUGE. WE ARE CURRENTLY IN THE PLANNING PHASE OF THIS YEARS ANNUAL MEETING WHERE WE WILL BE HAVING TWO EXCELLENT GUEST LECTURERS AND ELECTIONS FOR OFFICERS. THE THEME FOR THIS YEARS ANNUAL MEETING WILL BE THE HYDROGEOLOGY AND FLORA OF THE DELAWARE COASTAL PLAIN. FOR MORE DETAILS CONTACT DNPS AT DNPS@DELAWARENATIVEPLANTS.ORG, 302.376.5416, OR ON THE WEB AT WWW.DELAWARENATIVEPLANTS.ORG.

DNPS BI-MONTHLY MEETINGS FOR 2005 – ARE CURRENTLY SCHEDULED THE 3RD TUESDAY OF EVERY OTHER MONTH. OUR NEXT MEETINGS WILL BE: 18 JANUARY, 15 MARCH, ANNUAL MEETING IN MAY (MORE DETAILS TO COME LATER), 19 JULY, 20 SEPTEMBER, AND 15 NOVEMBER. MEETINGS WILL TAKE PLACE (UNLESS OTHERWISE NOTIFIED) AT 7 PM AT THE ST. JONES RESERVE, 818 KITTS HUMMOCK RD. ABOUT 1 MILE EAST OF THE RT. 9/113/KITTS HUMMOCK ROAD INTERCHANGE JUST AT THE SOUTHERN EDGE OF DOVER AIR FORCE BASE. WE PLAN TO HAVE GUEST SPEAKERS AT EACH MEETING (SPEAKERS AND THEIR TOPICS WILL BE ANNOUNCED AT LATER DATES). CHECK OUR WEBSITE FOR ADDITIONAL DETAILS OR EMAIL US AT DNPS@DELAWARENATIVEPLANTS.ORG.

Membership Application

DELAWARE NATIVE PLANT SOCIETY

Member Information

Name:

Business Name or Organization:

Address:

City and Zip Code:

Telephone (home/work):

E-mail address:

- Full-time Student \$10.00
- Individual \$15.00
- Family or Household \$18.00
- Contributing \$50.00
- Business \$100.00
- Lifetime \$500.00
- Donations are also welcome \$ _____

Membership benefits include:

- * The DNPS quarterly newsletter, *The Turk's Cap*
- * Native plant gardening and landscaping information
- * Speakers, field trips, native plant nursery and sales

Total Amount Enclosed: \$

**Make check payable to:
DE Native Plant Society
P.O. Box 369, Dover, DE 19903**

**DELAWARE NATIVE PLANT SOCIETY
P.O. BOX 369
DOVER, DELAWARE 19903**

