

The Turk's Cap

THE NEWSLETTER OF THE DELAWARE NATIVE PLANT SOCIETY

WINTER 01-2002

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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 have begun a reforestation project at Prime Hook State Wildlife Area. A second project is our now established native plant nursery. We have four beds in this nursery and have had a successful plant sale. We encourage everyone to participate in these, and other DNPS endeavors.

For more information on how to get involved, call 302.674.5187, or E-mail us at dnplant@aol.com. Or visit the new DNPS website at www.delawarenativeplants.org. Our new website has all of the past issues of *The Turk's Cap* along with a large photography section, and links to many 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 for more information at (ezuelke@juno.com), or Keith Clancy at 302.674.5187.

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A REFRESHING WINTER BREEZE WELCOME TO OUR NEWEST MEMBERS

October through December

Chris Bohinski
Merritt Burke III
Melvin D'Souza
Sterling & Nettie Green
Dr. Faith B. Kuehn
Cathy Martin
Betsy Ney
Joyce Ponsell
Paul Teese

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LETTER FROM THE PRESIDENT

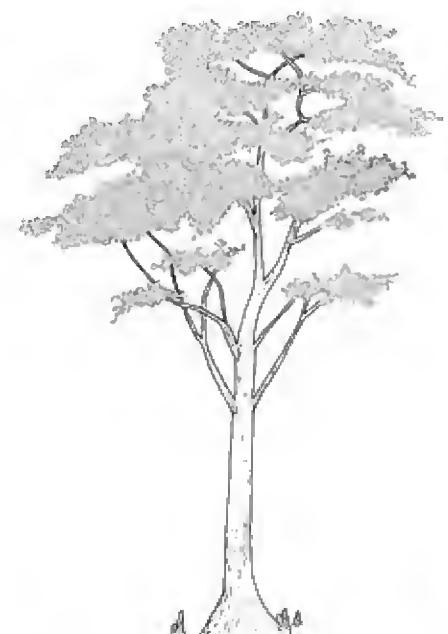
As the cold wind blows and the clouds settle in for the long winter season, it's the perfect time to dream about longer days, spring rains and the cornucopia of flowers that burst forth to beckon in a new spring. It is also time to briefly reflect on DNPS activities during 2001 and start planning for a better 2002.

This past year was one filled with many interesting times and developments. Members were active in developing our native plant nursery and, although, we were less successful in germinating seeds that were directly planted in seedbeds, we did learn a lot from our efforts; results for 2002 hopefully will be better. Our first annual native plant sale in early November was a rousing success. We had many members and non-members alike come out to the St. Jones Reserve to choose

Continued on page 5

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**WILL IT EVER SNOW?**

I think I need to get out my lawnmower, rather than a snow shovel! My grass has grown more in the past month than it did in August! I guess I shouldn't complain too much, at least I have a yard, which is more than a lot of people have. Not only do I have a nice sized yard, I have so many wildlife plants and flowers, that I should start my own nursery. Speaking of nurseries, our Feature Article for this issue focuses on the DNPS nursery at the St. Jones Estuarine Research Reserve, it's history thus far, and the details of what went into its creation. We thought everyone might be interested to learn about this dynamic project of ours. We also have two articles about some pretty dynamic plants, Atlantic white cedar and featherfoil. Our plant-animal highlight talks about amber, and last but not least, we have a new website. ☺

Eric Zuelke, Editor

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PLANT-ANIMAL HIGHLIGHT**"HELP, I'M STUCK"**

Imagine you're a bug happily marching along a tree trunk, or perhaps gnawing on a leaf or two here and there, when suddenly a sticky, gooey, oozing, honey-like mess comes flowing your way at a speed much faster than your little legs can carry you. What happens? Well, you get stuck and become a fascinating research project for scientists some 135 million years later.

Amber and invertebrates have had a long relationship. Over the years, scientists have discovered a 30 million-year-old stingless, tropical bee, and a 30 million-year-old termite both entombed and perfectly preserved in Dominican Republic Amber. They have also discovered a 120-135 million-year-old weevil found in Lebanese amber, and chloroplast DNA dated at 35-40 million years before present from the leaf of a West Indian locust preserved in Dominican Republic amber. They were able to extract DNA from all these specimens that lead to amazing discoveries, helping to show the origin and taxonomic relationship of animals, and plants. This information can be correlated with evidence from plate tectonics to show the ancestral migrations of animals and plants as they literally rode on the moving continents. Overall, an astonishing array of creatures have been discovered in Dominican amber, including beautifully preserved insects, spiders, bird feathers, mushrooms, an anolis lizard, and a tiny phoretic pseudoscorpion with one claw grasping the leg of a beetle. Even cellular structures such as ribosomes, mitochondria, nuclei and cell membranes have been observed in amber using an electron microscope. But what exactly is amber?

Since the first records of neolithic humans in Europe, approximately 5,000 years ago, amber has been cherished for its natural beauty and mysterious properties. Designated as tree resin by Aristotle, Pliny and others, amber was once thought to be solidified lynx urine, mineralized honey or petrified whale sperm. Many tree species are known to produce amber, but most neotropical (New World) amber comes from the fossilized resin of the extinct *Hymenaea protera* (West Indian locust), an ancient leguminous tree that once grew throughout the Caribbean region, Mexico, Central and South America more than 30

million years before present. East African copal, which is commonly used in bead jewelry, comes from *Hymenaea vernucosum*, a tree that is closely related to the West Indian locust. The trees of the genus *Hymenaea* produced copious amounts of terpene resin that flowed underground, probably as a chemical defense against the high diversity of plant-eating insects and parasitic fungi found in the tropics.

These subterranean resin globs have transformed into amber through a chemical process that required millions of years. Terpene resins are a class of chemicals composed of 5-carbon isoprene subunits joined together to form 20-carbon, nonvolatile diterpene molecules. Oleoresins also contain volatile 10-carbon (monoterpene) and 15-carbon (sesquiterpene) molecules, producing the "piney" aroma of these resins. While sitting in the ground, enzymes, pressure, and high temperatures act as catalysts to begin the polymerization process, which produces long-chain molecules from many repeating units of smaller short-chain molecules. The volatile monoterpenes and sesquiterpenes escape and the nonvolatile diterpenes bond together by addition reactions forming a hard plastic like polymer that is resistant to natural decay processes.

Many different species of plants in a variety of families produce sticky saps composed of gums and resins, but most of these substances do not form amber. True gums are polysaccharides composed of many sugar subunits linked together, and are soluble in water. Plant resins are often associated with pine pitch, but it is doubtful that this resin becomes amberized as commonly as the tropical broad-leaved conifers and legumes. When raw pine pitch is distilled the volatile "spirits" of turpentine are removed, leaving a solid residue known as rosin. Rosin has many industrial uses and provides the slight stickiness to help a baseball pitcher grip the ball. Rosin is also used on the bows of string instruments to make them slightly sticky, thus creating more friction and enhancing the tone of the music. Other plant resins include Japanese lacquer and the fragrant incenses frankincense and myrrh. There are also a lot of bogus ambers that are sold as the real thing, but are made of synthetic polymers. When exposed to ultraviolet light in a dark room, authentic Dominican Republic amber fluoresces intensely in beautiful shades of blue. The synthetic polymers also smell of plastic rather than the fresh, piney fragrance of real amber when burned.

Scientists believe that there must be countless tons of resin buried in the soil of the rain forests of the New World tropics. Although the chemical changes may go unnoticed in a human lifetime, some of these honeylike globs are undoubtedly slowly metamorphosing into amber, waiting to reveal their secrets someday. ☺

Eric Zuelke, Editor

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FEATURE ARTICLE**THE DNPS NATIVE PLANT NURSERY**

Starting a native plant nursery can be a daunting task. With the tremendous popularity of creating butterfly, bird and general wildlife gardens by people all over the world, there has come a strong demand for native plants to use in these gardens. People start plant nurseries for many different reasons; everything from small, hand nurtured non-profit nurseries serving a limited number of clients to sprawling, monstrously mecha-

nized for-profit nurseries serving entire states or regions. These nurseries range from those specializing in bedding plants, annuals and perennials, to those huge conglomerates (like Burpee Seeds) that mass produce millions of seeds of flowers and vegetables for the mail order markets. Other nurseries may specialize in ornamental woody plants and these may be wholesale or retail establishments. Still other nurseries may focus in producing large quantities of tree seedlings for reforestation projects. Once it is determined what type of nursery one wants to establish, the next question is where will this nursery be located.

Many hours of time are put into finding suitable locations, deciding on whether or not the nursery will be a true business or just a low-key labor of love, deciding on what kinds of plants the nursery will specialize in, dealing with zoning laws, the legal structure, production schedules, marketing and how much initial capital investment is needed. And without the proper planning and the proper partnerships, there is a persistent concern of failure in the face of big business, consumer-oriented nurseries like home improvement stores and "one stop shopping" kind of stores.

The Delaware Native Plant Society realized that there was a need for a local, native plant nursery here in Delaware. There are many established nurseries in the state already, but we felt there was a need for a centrally located nursery that specialized in native plants propagated from locally collected, and therefore indigenous, seeds. Virtually all other nurseries in Delaware offer a wide assortment of ornamental, mostly exotic species. Individuals or land stewards interested in obtaining native plants have to go out of state to obtain these plant materials.

Originally, we intended on establishing native plant nurseries in all three counties, but in the planning phase we realized that this was a pretty ambitious adventure and that perhaps our scope should be a little smaller until we actually figure out what we're doing or had the necessary resources (i.e., lots of volunteers). This nursery has truly been a labor of love to this point and everything about the nursery has been a hands-on, nearly non-mechanized affair. Our first obstacle in creating the nursery was finding a location. We had several ideas floating around until we learned about the availability of some land at the Delaware National Estuarine Research Reserve (DNERR) in Kent County, the St. Jones Reserve, off Kitts Hummock Road. The Reserve is managed by the Division of Soil and Water, of the Delaware Department of Natural Resources and Environmental Control (DNREC). We entered into discussions with Mr. Dave Carter of the Division of Soil and Water and Mr. Mark DelVecchio, the manager of the Reserve about establishing a native plant nursery on cleared land at the Reserve. And after a number of discussions and the drafting of a management plan we entered into a three year Memorandum Of Agreement (MOA) with DNREC to establish this nursery.

One of our initial conversations dealt with whether or not our nursery would be compatible with the land use agreements made by the St. Jones Reserve and the state. After it was determined that our nursery would be compatible, stipulated by the fact that we would be specializing in native plants only, we began preparations in earnest.

We then decided, through a number of business meetings, what kinds of plants we would specialize in propagating. It was agreed that we would start with a focus on woody plants and that we would try and propagate enough seedlings of trees to benefit reforestation projects throughout the state. We would

NATURAL QUOTES

'Love of the land is the basis for the unending struggle of those who really care against those who see only material rewards.'

Sigurd F. Olsen, *Reflections from the North Country*, 1976

later propagate shrubs and herbs.

We began to gather together equipment and materials, designed the size and number of planting beds we would start with, and staff at the St. Jones Reserve plowed up our first two beds (of which we were very grateful for their assistance). Soon afterwards, we gained permission to dig-up plants from a forest that was to be clear-cut for the future Rte 1 by-pass. Several DNPS members, in 90 degree plus heat and with chainsaws bearing down, were able to rescue many of the plants that were in the path of the construction activities; we only wished there were more of us on that day. We transplanted these plants the next day and the nursery, after months of planning, negotiations and preparations, finally began to look like a nursery.

The next endeavor involved gathering volunteers to collect seeds in local forests that we would direct seed into tilled beds. We collected several thousand seeds of various oaks, hickories, black walnut, persimmon, and tulip poplars, among others. Seeds were primarily collected from Blackbird State Forest, Prime Hook Wildlife Area, and Nanticoke State Wildlife Area. In the fall Eric Zuelke and Keith Clancy hand-sown about 2000 seeds of hickories and oaks in one tilled bed. And the following spring we roto-tilled another bed to direct seed an additional several thousand seeds collected from the previous fall. A thin layer of mulch was placed over the seeds. For one of the beds we installed chicken wire and shade cloth, which was effective in keeping out rabbits and deer but not squirrels or other rodents. The seed bed planted in the spring was not immediately fenced and that proved to be a fatal oversight, as most of the seeds sown were pilfered by raiding rodents. It wasn't a total failure however, since the bed sown in the fall, resulted in the sprouting of a few dozen plants. These seedlings were dug-up by the end of the season and placed in a pot-in-pot method and put back in the ground and covered with mulch. The fruits of our labor thus far were realized in November of 2001 when we hosted our first native plant sale. Most of the plants in the nursery were potted up in preparation for the sale. In addition, some members also generously donated many plants for this sale. The sale was a huge success and gave us all hope that this native plant nursery endeavor might work out after all.

However, we must learn from the trials and tribulations that we experienced last year, not to repeat the mistakes we made and coax other DNPS members to become involved in this nursery operation, either by offering their expertise or muscle. We would also like to have someone track development projects to identify forest tracts to be cleared so that we may have an opportunity to "rescue" many of these plants and transplant them to our native plant nursery; these to be made

available at our annual plant sales or for restoration projects.

This coming year we have taken a different approach to germinating seeds. Members have volunteered to germinate seeds of various species collected last fall. They will give the seeds the necessary pre-treatment regimes of stratification and will sow the seeds in the spring in pots or flats at their homes. Eventually, many of these seedlings will make their way to our nursery. In addition, we may acquire a small and inexpensive, collapsible, germination house to try and germinate seeds at the nursery.

Late in 2001 staff at the St. Jones Reserve installed a split rail fence with mesh wire demarcating the boundaries of the native plant nursery.

The DNPS native plant nursery at the St. Jones Reserve offers a welcome alternative to the typical nursery that limits its offerings to non-native species, and it is also an effort that has truly come from the hearts of those involved. With the support of the staff at the St. Jones Reserve and the elbow grease of the DNPS members and volunteers, we can see our little nursery becoming a great resource for everyone in the state. ☺

oooo Eric Zuelke and Keith Clancy, Managers, DNPS native plant nursery

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NATIVE PLANT COMMUNITY HIGHLIGHT

Chamaecyparis thyoides - *Acer rubrum* / *Magnolia virginiana* / *Alnus maritima* Forest
Atlantic White Cedar-Red Maple / Sweetbay / Seaside Alder Forest (Delmarva Atlantic white cedar swamp)

Introduction

One of Delaware's most important wetland resources, Atlantic white-cedar swamps occur in association with streams in the southern portion of the state. Dark and mysterious, these swamps have long been a source of interest to botanists. Unfortunately, Delaware's cedar swamps currently occupy only a fraction of the area they once did, as the wood of the white-cedar tree was highly valued for its decay-resistance, and was often used to produce building shingles. Today, many of the examples that remain are on protected lands, and those that are not should be a high priority for conservation.

Description

This community typically forms where streams flow slowly through an unconsolidated sand/gravel substrate. Soils generally consist of poorly drained organic muck. Historical disturbances such as fire, wind throw, ice damage, cutting and flooding have probably had a considerable influence on the structure and composition of existing stands. The canopy of this mixed forest contains *Chamaecyparis thyoides* (Atlantic white-cedar) and *Acer rubrum* (red maple) as co-dominants. Other less abundant canopy trees include *Fraxinus pennsylvanica* (green ash), *Nyssa sylvatica* (blackgum), *Diospyros virginiana* (persimmon), and *Pinus taeda* (loblolly pine). The subcanopy tree/tall shrub layer may be diverse. It typically includes *Ilex glabra* (inkberry), *Ilex opaca* (American holly), *Clethra alnifolia* (sweet pepperbush), *Magnolia virginiana* (sweetbay magnolia), *Rhododendron viscosum* (swamp azalea), *Leucothoe racemosa* (fetterbush), *Viburnum nudum* (possum-haw) and *Vaccinium*

corymbosum (highbush blueberry). One of the nominate species, *Alnus maritima* (seaside alder), is a shrub nearly endemic to the Delmarva Peninsula, and typically occurs in canopy openings and along the stream edge, where it can receive more sunlight than in the shady interior. The herbaceous layer is also diverse and commonly includes *Arisaema triphyllum* (jack-in-the-pulpit), *Carex collinsii* (Collin's sedge), *Boehmeria cylindrica* (false nettle), *Mitchella repens* (partridgeberry), *Osmunda cinnamomea* (cinnamon fern), *Osmunda regalis* (royal fern), *Peltandra virginica* (arrow arum), *Woodwardia areolata* (netted chainfern), *Thalictrum pubescens* (tall meadow-rue), *Impatiens capensis* (orange jewelweed) and others.

Distribution

Examples of this community can be found along the Nanticoke River, Cedar Creek, Tantrough Branch, Pemberton Branch, Brittingham Branch, and probably elsewhere in the state. Overall, this community is confined to the Delmarva Peninsula. Some good examples that are open to the public can be found on the Nanticoke Wildlife Area, west of the town of Laurel. ☺

oooo Peter Bowman, DE Natural Heritage Program Ecologist

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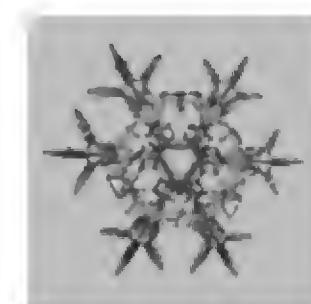
RESOURCES AND REVIEWS

WILDFLOWERS OF PENNSYLVANIA

This is a fabulous book written by Mary Joy Haywood, Phyllis Testal Monk and members of the Botanical Society of Western Pennsylvania. This book ranges in suitability for the novice to the professional botanist. On the front and back covers are illustrations of flower forms and leaf forms. Each species is grouped by family and has a photograph and a detailed morphological description. The photographs are excellent, and this would be a great book to use in conjunction with *Newcombs Guide to Wildflowers* and the *Flora of Delaware: an annotated checklist*. Contact information: Wildflowers of Pennsylvania, Mary Joy Haywood, 3333 Fifth Ave., Pittsburgh, PA, 15213.

WEBSITE FOR MEDICINAL AND EDIBLE PLANTS

If you're into cooking with wild plants, or using plants for holistic or herbal medicine then this website could be a great resource. At <http://www.herbalsclearinghouse.com>, you can find a ton of information on topics ranging from guides to plants, uses of medicinal plants, conservation organizations, cooking with wild plants, identifying poisonous plants in the wild, and wilderness survival. This website has something for everyone, from cooking tips for the family to surviving those wilderness backpacking adventures to Canada, or your favorite mountain climbing spot.



LETTER FROM THE PRESIDENT

Continued from page 1

from a wide selection of native plants at very reasonable prices. Many of the plants that we had previously rescued in 2000 from a threatened forest, were bought at this sale and hopefully will have a long and pampered life. Members also donated several hundred plants that proved to be very popular. All in all, we sold more than 200 plants of over forty different species of trees, shrubs and herbs. Cardinal flowers (45 plants), mixed oaks (27 plants) and swamp sunflowers (21 plants) were the biggest movers. Other popular sellers included bonesets, partridgeberry, inkberry, bayberry, and pipsissewa. Thanks to Nancy Adamson, Karen & Chris Bennett, Diane Chance and Bob Edelen for their donations of plants. I want to also thank those members that helped with the plant sale: Rick McCorkle, Bill McAvoy, Eric Zuelke, Flavia Rutkosky, Rick Mickowski, Betsy Archer, Diane Chance, and Bob Edelen. My apologies if I have forgotten anyone.

As far as field trips in 2001, what we lacked in quantity we made up for in quality. Highlights for the year included an awesome kayak/canoe trip along Prime Hook Creek in August (we'll have to have a repeat of this trip in 2002 on a different stream), an enlightening trip to the Claude E. Phillips Herbarium at Delaware State University also in August, and a seed-collecting trip to Blackbird State Forest in November. The year 2002 should be even better.

2001 also proved to be a great year for increasing our membership. We added 32 new members during the year, which translates to an increase of more than 60 percent!

I am very excited about the upcoming year and all that it has to offer. I look forward to meeting many of you on field trips and at events throughout the year.

Members are pre-treating seeds collected from the fall of 2001 and will attempt to germinate a number of species. Seedlings that result from these efforts will be transferred to the nursery, hopefully, later this year (members will also be able to keep some of the seedlings for their own properties). Last year was not a particularly productive one for seed for many of our native tree species so we wound up collecting many seeds of winterberry, arrowwood, and partridgeberry, among others, and, therefore, will be sorely challenged to successfully germinate these seeds.

Our field trip agenda for 2002 should be more robust than 2001 and will start earlier. We have field trips already planned for February and March (see Upcoming Events section in this issue). I hope that many DNPS members will be able to attend these outings.

This year will require renewed efforts to improve the quality of our native plant nursery. I hope that more members will be able to volunteer their time and expertise to this work. And remember anyone that works out at the nursery is entitled to receive complimentary plants from their volunteering. This coming spring we will be working out at the reforestation site at Prime Hook State Wildlife Area to do some weeding and, possibly, some transplanting. Volunteers are needed!

And speaking of reforestation, I am pleased to announce that we just received notice from the Partnership for the Delaware Estuary that we have been awarded a mini-grant for \$3600 to undertake one, or more, reforestation projects in the Delaware Estuary. I am really excited about this project and its potential for long-term benefits in restoring some of our lost for-

ests. We will be collecting seeds of native species of trees and shrubs from intact forest habitats and then use a direct seed approach to reforestation; this method proved to be very effective at Prime Hook. While the grant funds will be used to purchase flags and tree tubes as well as to pay several DNPS members for their time, we will still need members (and non-members too) to volunteer their time to make this a successful project; the more participants we have the greater the amount of acres that can be reforested. During the next few months we will be talking with land stewards to identify potential reforestation sites. Please contact me if you have any interest in this project or would like more information. Also, please check our website for more details in the coming months.

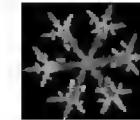
And speaking about our website, I am very pleased to announce that it has finally been updated and completely overhauled. This updating is still processing and should be more or less completed in the next few weeks. Your comments are welcomed.

Finally, I want to conclude this letter with a wish that everyone has a very prosperous and happy 2002, and one filled with all things related to native plants. I'd also like to say that we are always looking for active members and I encourage everyone to take a more active role in their society. There is a lot to do and we need your help. We need members to play active parts in public outreach, conservation issues, reforestation projects, invasive species control initiatives, and field trip leaders/organizers, among other activities.

Well, I for one am not going to sit home all winter dreaming about the spring, but rather will endeavor to get out as much as I can to see what's up with our winter flora. Besides, there's usually one thing or another blooming in January. ☺

Sincerely,

Keith Clancy

**THE DNPS WEBSITE**

At long last, our website is being completely revised and updated. Check out our newly designed website at www.delawarenativeplants.org (Please note: this is a new address). The site is still under construction so please check back on a regular basis. We plan on having a photo library that will allow visitors to view high quality images of Delaware's flora and native plant communities. Accompanying each image will be a brief description of the plant or community, information on the plant's distribution, planting needs, wildlife and ornamental attributes. There will be sections on Delaware's invasive and exotic species, upcoming events, publications, and an online version of our newsletter, and related links among other topics.

Please take some time to check out our site. All comments and suggestions for improvements are welcomed. Also, if you have any photos that you would like to see added to the site please contact dmps@delawarenativeplants.org with details.



NATIVE PLANT HIGHLIGHT**FEATHERFOIL**

This issue's native plant highlight focuses on the wetland plant featherfoil (*Hottonia inflata* Ell.) of the Primulaceae, the Primrose Family. Featherfoil is an obligate wetland plant with a curious appearance and a fascinating lifecycle.

In Delaware, featherfoil is found growing primarily in coastal plain ponds and occasionally in beaver ponds. Coastal plain ponds are depressional wetlands found within wooded areas of the state, and are typically flooded in the early spring when the ground-water table is high, and dry in late summer when the ground-water table is low. Coastal plain ponds are home to a diverse suite of plant species, many of which are rare or uncommon in Delaware. In addition, coastal plain ponds provide critical breeding habitat for frogs and salamanders.

Featherfoil has a unique and interesting appearance. The plant is branched apically (at the tip) into many erect, hollow, inflated, leafless flowering stems that are contracted at the nodes (position on the stem where leaves, flowers, or branches originate). The pedicellate (with a stalk to a single flower) flowers, which are white with five petals, occur in whorls (a ring-like arrangement) at the nodes, and the fruiting capsules are many seeded. At the base of the flowering stems are submerged leaves that are pectinate (comb-like) in form and have the appearance of a feather, hence its common name.

Featherfoil is an annual species and its life cycle is totally dependant on the fluctuating water levels that occur in wetland types such as the coastal plain pond. In early spring, usually in April when the ponds are flooded, featherfoil begins to flower. The hollow, inflated stems actually float at the water's surface and are rooted in the pond bottom by a long, nearly naked vegetative stem. Flowering usually lasts for two-to-three weeks and seeds mature soon after flowering ceases. Mature seeds then fall from the plant and sink through the water column of the still flooded pond. The seeds come to rest on the pond bottom, where they wait patiently while the pond slowly draws-down through the summer. In late summer after the pond has been dry for a period of time, seeds of featherfoil begin to germinate, usually in September or early October. After germination, a small rosette (a dense radiating cluster of leaves at ground level) develops that is about two inches across and pectinate in form. The rosette will remain green through the winter even as the ground-water table rises and the ponds flood. The high waters likely protect the rosettes from cold winter temperatures. After a long winter sleep, something then triggers the plant to develop a stem and climb to the water's surface. I have observed featherfoil flowering in over three feet of water, so that climb to the surface can sometimes be quite an effort. From the stem, flowers develop and once again the flowering process begins and the cycle repeats.

Featherfoil has been known to perform a disappearing act, meaning, it can be present in high numbers at a particular site one year, but be completely absent the next, then reappear in the future. This appearance/disappearance regime may be a result of several factors. One factor being, less than satisfactory growing conditions, e.g., the ponds never draw-down in a particular year allowing time for winter rosettes to develop. Another factor, as some researchers have suggested, may be that featherfoil functions on a two-year lifecycle instead of annually, i.e., seeds germinate after two years not during the first.

In the eastern U.S., featherfoil is more southern in its

distribution. It occurs sporadically along the Atlantic coastal plain from Maine to Florida, but is rare and uncommon in the northern portions of its range. In Delaware, featherfoil is currently restricted to SW New Castle Co. and NW Kent Co., which is not surprising considering that these regions of the state support the highest frequency of coastal plain ponds.

Featherfoil is considered a rare species in Delaware and is known from only 14 distinct populations. ☺

oooo William McAvoy, DNPS member

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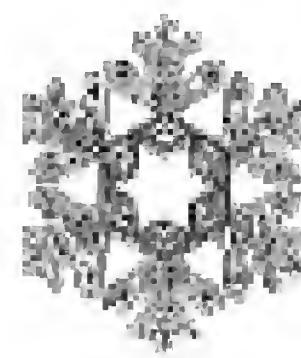
SNOWFLAKES

Out of the bosom of the Air,
Out of the cloud-folds of her garments shaken,
Over the woodlands brown and bare,
Over the harvest-fields forsaken,
Silent, and soft, and slow
Descends the snow.

Even as our cloudy fancies take
Suddenly shape in some divine expression,
Even as the troubled heart doth make
In the white countenance confession,
The troubled sky reveals
The grief it feels.

This is the poem of the air,
Slowly in silent syllables recorded;
This is the secret of despair,
Long in its cloudy bosom hoarded,
Now whispered and revealed
To wood and field.

Henry Wadsworth Longfellow



UPCOMING EVENTS

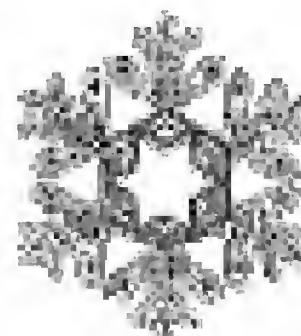
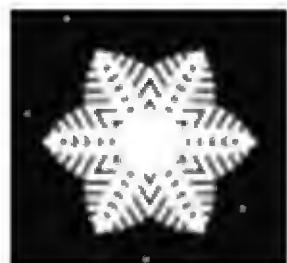
SATURDAY, 23 FEBRUARY 2002 – A MID-WINTERS NATIVE PLANT HIKE AT CAPE HENLOPEN STATE PARK, FROM 10 AM TO 3 PM, WILL TAKE US THROUGH RARE PITCH PINE FOREST AND SCRUB COMMUNITIES, BEACH HEATHER AND BEACHGRASS DUNES, INTERDUNAL SWALES AND VAST SALT MARSHES. WE WILL ALSO LEARN A LITTLE ABOUT COASTAL GEOLOGY AND WILL WITNESS THE INEXORABLE MOVEMENT OF SAND AS A RESULT OF SEA-LEVEL RISE. THE ROLE THAT CAPE HENLOPEN PLAYED DURING WWII WILL ALSO BE INVESTIGATED. THIS IS A FIELD TRIP YOU WILL NOT WANT TO MISS. DRESS APPROPRIATELY FOR CHILLY LATE FEBRUARY WEATHER. FIELD TRIP LEADER: KEITH CLANCY. WE WILL MEET IN THE PARKING LOT ACROSS FROM THE OBSERVATION TOWER THAT IS OPEN TO THE PUBLIC (THIS IS BETWEEN THE CAMPGROUND AND THE OLD FT. MILES). BRING A BAG LUNCH AND SOMETHING TO DRINK AND DRESS WARMLY. FOR MORE DETAILS OR TO SIGN-UP FOR THIS TRIP PLEASE CALL 302.674.5187 OR EMAIL AT DNPS@DELAWARENATIVEPLANTS.ORG.

SUNDAY, 24 FEBRUARY 2002 – WINTER FESTIVAL. FROM 1 PM TO 4 PM AT THE ASHLAND NATURE CENTER. ANIMAL TRACKS IDENTIFICATION, WINTER SURVIVAL SKILLS, MAPLE SUGARING, WINTER MYSTERY HIKE, AND SLEDDING IF THERE IS SNOW. ADMISSION IS \$4.00 FOR ADULTS, \$1.00 FOR CHILDREN. CALL 302-239-2334 FOR MORE INFORMATION, OR ON THE WEB AT WWW.DELAWARENATURESOCIETY.ORG.

SATURDAY, 16 MARCH 2002 – COPELAND NATIVE PLANT SEMINAR. FROM 8 AM TO 4 PM AT THE DELAWARE MUSEUM OF NATURAL HISTORY. THE KEYNOTE SPEAKER WILL BE DARRELL MORRISON WHO WILL FOCUS ON DESIGN IN NATIVE PLANT COMMUNITIES. JEN GOCHENAUER, AND OUR OWN BILL McAVOY (AUTHOR OF ALL OUR NATIVE PLANT HIGHLIGHTS) WILL ALSO GIVE PRESENTATIONS. THERE WILL ALSO BE GUIDED FIELDTRIPS AND A CATERED LUNCHEON. CALL 302-239-2334 FOR MORE INFORMATION, OR ON THE WEB AT WWW.DELAWARENATURESOCIETY.ORG.

SATURDAY, 23 MARCH 2002 – A POST-EQUINOX PLANT HIKE AT KILLENS POND STATE PARK, FROM 10 AM TO 2 PM. WE WILL WANDER THROUGH MIXED HARDWOOD-PINE FORESTS AND VENTURE TO THE EDGE OF PALUS-TRINE STREAMSIDE SWAMP FORESTS WHERE WE MAY CATCH A GLIMPSE OF THE RARE SWAMP PINK. THIS WILL BE A GREAT TIME TO OBSERVE MANY PLANTS THAT ARE BEGINNING TO AWAKE FROM THEIR LONG WINTER'S NAPS. DRESS APPROPRIATELY FOR EARLY SPRING WEATHER. FIELD TRIP LEADER: KEITH CLANCY. WE WILL MEET IN THE PARKING LOT NEAR THE CABINS OFF PARADISE ALLEY ROAD (ON THE SOUTH SIDE OF THE PARK). FOR MORE DETAILS OR TO SIGN-UP FOR THIS TRIP PLEASE CALL 302.674-5187 OR EMAIL AT DNPS@DELAWARENATIVEPLANTS.ORG.

DNPS BI-MONTHLY MEETINGS 2002 – ARE CURRENTLY SCHEDULED FOR JANUARY 15, MARCH 19, MAY 21, JULY 16, SEPTEMBER 17, AND NOVEMBER 19, 2002. MEETINGS WILL TAKE PLACE, UNLESS OTHERWISE NOTIFIED, AT 7 PM AT THE AQUATICS RESEARCH AND EDUCATION CENTER, WOODLAND BEACH WILDLIFE AREA, RTE 9 (4876 HAY POINT LANDING ROAD) ABOUT 1 MILE NORTH OF RTE 6. WITH THE EXCEPTION OF THE JANUARY MEETING, WE WILL HAVE GUEST SPEAKERS AT EACH MEETING (SPEAKERS AND THEIR TOPICS TBA AT A LATER DATE). BUSINESS MEETING WILL TAKE PLACE AFTER EACH SEMINAR. 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:

- " Individual \$15.00
- " Full-time Student \$10.00
- " 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 and field trips

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

