Winter 2005

News and Notes is issued three times a year, in January, May, and September, to stakeholder organizations to keep them informed about recent Arboretum accomplishments and activities. Stakeholders are encouraged to use material from this document in reports to their members. Please send comments to:

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#### **Donations Make a Difference**

The U.S. National Arboretum received record levels of donations in 2004, which allowed many projects and improvements to move forward. Gifts to the arboretum were in the form of funds for specific projects and general operations; objects such as books, plants, and works of art; and volunteer services. Major gifts were received from the Friends of the National Arboretum (FONA) and the National Bonsai Foundation (NBF). FONA presented the Arboretum with \$650,000 for the construction of a flowering tree walk that will link several major garden displays while providing an opportunity to display some outstanding flowering trees. This walkway, along with an accessible path to the National Capitol Columns, is presently under construction.

The USNA also received \$250,000 from the National Bonsai Foundation to help fund the construction of the lower courtyard and demonstration area within the National Bonsai and Penjing Museum. This will make a greater portion of the museum fully accessible and provide a more pleasing setting to study and appreciate bonsai.

The value of gifts in kinds were estimated to be \$235,000, including two, large world-class bonsai from Japan and a collection of large rare chrysanthemum stones. Other gifts in kind included rare and out-of-print books, pots, and plant materials. Volunteer services to the arboretum are a critically important aspect of our day to day operations, particularly in the collections. Over 175 volunteers contributed approximately 4 hours of service each week. Many more volunteers helped out at special occasions throughout the year. The value of those services was calculated at \$251,900 in 2004.

The level of donations and donated services and materials is steadily increasing each year and playing a more important role in the quality of our garden displays, collections, and programs. Donations to the USNA that are used to benefit the public good are tax deductible. For more information about supporting the National Arboretum, contact the director's office at (202) 245-4539.



Volunteers working in the National Herb Garden.

#### Bonsai Lower Courtyard Construction Underway

The lower courtyard of the National Bonsai and Penjing Museum will soon match the quality and beauty of the completed upper courtyard. Contractors are laying flagstone pavers and constructing the Melba Tucker Demonstration Arbor. The construction is the second phase of the courtyard redesign project, the goal of which is to better unify the different pavilions and to make the collections, paths, and entrances accessible. The first phase, the walkway under the cryptomeria trees and the entrance area with the fountain, was completed in 2002. A major donation from Deborah Rose (Rose Foundation) was instrumental in allowing the lower courtyard to be constructed. Her generous donation to the National Bonsai Foundation along with the gifts of many Foundation members ensured that construction could begin in time for the new space to be ready for the 5th World Bonsai Convention in May 2005.

While the courtyard work is proceeding, contractors are also making needed repairs and ventilation improvements to the Dr. Yee-sun Wu Chinese Pavilion.



Construction of the new lower courtyard in the National Bonsai and Penjing Museum.

When this work is complete, staff will be able to more effectively manage and control the temperature in the pavilion, thus providing a better environment for overwintering the bonsai and penjing.

#### Flowering Tree Walk and Capitol Columns Improvement Update

During the winter, visitors can watch the progress of construction projects in the ellipse meadow area where the Flowering Tree Walk will be taking shape and where the Capitol Columns will be gaining an accessible path and plaza. The walk is part of the Arboretum's Master Plan and creates an accessible path connecting the Administration Building Area, the National Herb Garden, the National Bonsai and Penjing Museum, the Capitol Columns, the Azalea Collection and the Capitol Columns Overlook. When complete, it will be planted with showy flowering trees and be a pleasant way for visitors to reach the various destinations. An accessible path to the Capitol Columns from Ellipse Road and nearby handicapped parking will ensure that all of our visitors can enjoy the majestic beauty of the columns up close.

The meadow construction site will be fenced off, but visitors will be able to see that a lot of soil is being removed in an area that is being recontoured. The knoll where an old willow oak used to stand will be reconfigured as part of the new storm water management system.

In significant precipitation events, water will flow to this area to be released slowly, thus significantly reducing erosion in the beech/oak forest across the road.

The staff is excited that this project is underway and that visitors will soon be able to enjoy more of the Arboretum by accessible pathways. They are also excited about the opportunity to add some beautiful new plants. Look for the completed walkways in late spring and a lot of tree planting in the fall.



#### New Gardens Unit Leader Named

Scott Aker has been appointed the new Gardens Unit Leader. He has been acting in this position since July 2003. Aker brings a wealth of education and experience to this challenging job. He holds both a bachelor's and master's degree in horticulture and worked as an extension agent before coming to the Arboretum.

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New Gardens Unit Leader Scott Aker.

Hired in 1992 as the Arboretum's first Integrated Pest Management (IPM) Specialist, Aker changed the institution's approach to pest management. During his tenure the Arboretum reduced its use of pesticides by 75%. He developed a full service IPM program—one where the specialist not only monitors plants for pests and diseases, but also treats them and advises staff about improved cultural practices—and created a strong outreach program, holding symposia, workshops, and other educational programs on IPM. His expertise led to his signing on as a weekly columnist for the Washington Post. For five years he has written answers to questions about plants and gardening. Aker's successful interactions with other Agricultural Research Service staff, outside organizations, and with the media are other valuable strengths that he brings to this position.

Goals for the next few years for the Gardens Unit include taking a comprehensive look at land management on the Arboretum's DC campus, in other words, taking care of the woodlands and other areas between the curated gardens and collections; bringing in representatives of stakeholder groups to contribute ideas for the refinement and development of collections; and strengthening private-public partnerships to find creative ways to secure the resources necessary to maintain and further develop collections and gardens.

#### Education and Visitor Services Unit Welcomes Two New Employees

Last fall a full-time Special Events Coordinator and a part-time Volunteer Coordinator joined the Education and Visitor Services Unit. Susan Burgess, a special events professional, has managed and produced special events, meetings, and conferences for over fifteen years. She served as the Director of Special Events at the Cystic Fibrosis Foundation, the Director of Alumni Relations at The American University, and the Assistant to the President and Senior Vice President of the International Networks **Division of Discovery** Communications.



New Special Events Coordinator Susan Burgess.

Sue coordinates all of the Arboretum's special events and facility uses. In addition to her events management role, she also serves as the press contact for the Arboretum.



New Volunteer Coordinator Rose Ann Davis.

Rose Ann Davis, whom many regular Arboretum visitors know well from her job at the Administration Building's information desk, accepted a promotion into the Volunteer Coordinator position. No secret to those who have benefited from her gracious assistance and prodigious knowledge, Rose Ann's many talents stem from years of education and experience. Among other jobs, both paid and volunteer, Rose Ann ran her own flower store business for many years and coordinated programs for people with developmental disabilties, supervising staff in both positions. Already underway are plans for a volunteer recruitment, recognition event, and training. The Arboretum web site will be updated regularly to share new volunteer opportunities.

#### **New Gardeners Hired**

Three new horticulturists began work in support positions at the Arboretum in November 2004. Sarah Egbert and Bradley Evans were hired to fill temporary positions in the Asian Collections. These positions were vacated when George Waters and Patrick Lynch began permanent positions at the Arboretum on July 26. Egbert and Evans are supported by private funds from the Chadwick Trust that are used to augment federallysupported staff. Egbert, a native of Corvallis, OR, served as intern in the Asian Collections this year. Evans is a native of Annapolis, MD, and served as greenhouse manager at Towson State University in Towson, MD.

Christopher Upton fills a temporary position in the Fern Valley Native Plant Collection and the National Grove of State Trees that was vacated by Hannah Flynn when she began a permanent position at the Arboretum on July 26. Upton is from Silver Spring, MD. He worked as an estate gardener and worked in the Asian Collections in the early 1990s. Half of the funds needed for this position are supplied by the Forest Service for maintenance of the National Grove of State Trees, and the other half comes from the Gardens Unit budget. All three positions are temporary. They run for a full year, but may be renewed annually for a total of four years provided that funding is available.



New gardeners (from left) Christopher Upton, Bradley Evans, and Sarah Egbert.

### 2005 Internship Positions Advertised

Ten internships will be available in 2005 at the National Arboretum, including two new positions. The turfgrass genetics research program, which focuses on developing turfgrasses that require fewer chemical and management inputs, will hire an intern to assist in a number of laboratory experiments

designed to study the genetics of grass plants used as turfgrasses. A marketing intern will work closely with the Administration and **Marketing Manager** and the Director to develop a plan and to project income and expenses for events on the site of a proposed 12-acre classical Chinese garden. Details are available on the Arboretum web site.

## Arboretum Participates in Cherry Blossom Festival

For the first time, the National Arboretum will be an official participant of the National Cherry Blossom Festival. The Arboretum will join other area institutions in hosting events to help celebrate the two-week-long festival, which takes place March 26 - April 11, 2005. The Arboretum will have an exhibit of the staff's picks for the region's Top Ten Flowering Cherries. The display will include live plants and source information. Visitors may also take a self-guided tour of the Arboretum's wealth of flowering cherries, from the spectacular weeping varieties near the National Herb Garden to the stunning acres of cherry tree research fields that showcase a dazzling array of colors and bloom types. Two special programs take place in April.

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Group picture of the 2004 interns. From left to right, front row: Denise Whitman, Deanna DiDonato, Elizabeth Myers, Micki Kuhlman.

From left to right, back row:

Meg Williams, Todd Rounsaville, Alex Berger, Sean Marick, Sara Egbert, Shearson Nurse (RAP Student from DuVall High School), Autumn Forrest. (continued from Page 4)

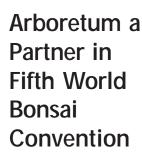
On April 2nd and 3rd, Diane **Tuckman of Silk Painters** International will provide instruction, demonstration, discussion, and samples during Cherry Blossoms on Silk, a handson workshop. On April 16th, author Ann McClellen presents a talk on her hot-off-the-press, lavishly illustrated, fact-filled book The Cherry Blossom Festival: Sakura Celebration—a tribute to one of the world's greatest festivals. McClellen's book explores the history and symbolism surrounding the cherry blossom, including the story of the tree's thousand-year-old cultivation and significance in Japan. Details about these programs are available on the Arboretum's web site.

The Arboretum will also staff a booth during the Sakura Matsuri, the annual Cherry Blossom Street Festival on April 9th where it will showcase the National Bonsai and Penjing Museum and present a demonstration of bonsai wiring and pruning. This popular event takes place on Pennsylvania Avenue and 12th Streets from 11 am – 6 pm. A wide variety of vendors and organizations participate. Visit the Festival's official web site www.nationalcherryblossomfestival.org to view details.

#### Japanese Botanical Art Exhibit Makes First US Appearance at National Arboretum

The Japanese Association of Botanical Illustration is sharing 72 original illustrations from its recent publication Endangered Plants of Japan: A Florilegium with the American public. Seventy-two botanical paintings depict Japan's rarest and most notable plants and are each done by a different member of the association. The National Arboretum hosts the exhibit from March 1 – June 30. 2005, with the show traveling to the Chicago Botanic Garden where it will be on display from September 1 - 31. The Japanese Association of Botanical Illustration is a nationwide organization established in 1991 by botanical artists and includes beginners as well as professionals. In 1998 the group began a project to draw public attention to plant conservation issues by painting almost 200 of Japan's rare and endangered plants as they found them in their native habitats. They published a book,

the *Florilegium*, containing all of their illustrations and offered the original works as a traveling exhibit. Twelve of the artists will attend a public reception at the Arboretum on March 5 from 2 – 4 pm. Visit the Arboretum web site for details.





MAY 28-31, 2005

Over the past 3 years, the National Arboretum has been working with the American Bonsai Society. Bonsai Clubs International, the National Bonsai Foundation, and the Potomac Bonsai Association to bring the 5th World Bonsai Convention to the Nation's Capital on May 28 – 31. This important international event provides a rare opportunity for participants to see many of the foremost bonsai and penjing masters in the world demonstrate their expert techniques. Workshops conducted by outstanding practitioners will allow participants the opportunity to create a bonsai specimen or a miniature flower arrangement. Prominent scholars on bonsai, viewing stones, and pots will lecture during the three-day event. Exhibits of outstanding bonsai and penjing specimens, viewing stones, and pots will be on display throughout the convention. Numerous vendors will display and sell bonsai-related items.

On May 29th, the Arboretum will host a dinner and give tours of the National Bonsai and Penjing Museum. The World Bonsai Convention is held every 4 years; the 2001 meeting was held in Munich, Germany. The event in Washington, D.C., is only the second time this convention has been held in the United States. To register, and for more information about the convention, click here.

#### Bartlett Tree Experts Company Employees Donate Valuable Workday

Bartlett Tree Experts made the Arboretum an offer it couldn't refuse: Bartlett employees would come to the Arboretum to provide plant health care services as a day of service. In the morning hours of Saturday, October 23, Bartlett Tree Experts arborist crews from home offices throughout the region arrived in force—60 strong—to complete various arboriculture tasks in the Arboretum's collections. With them came a full complement of equipment and trucks. Staff broke into five work groups to work on trees in different locations throughout the Arboretum. Crews worked on cabling to protect an elm from storm damage, pruned dead wood from trees, performed root excavation on two trees to reveal root zone problems, planted maples in the Maple Collection, and fertilized trees.



Lacebark pine in Morrison Garden receives new cabling.



Bartlett Tree Experts arborists at work in Azalea Collection.

One tree that received special attention was the over 50-year-old Pinus bungeana (lacebark pine) in the Morrison Garden. In its branches, arborists installed a newly developed Cobra System for cabling. This type of cabling does not require drilling into branches and encourages the tree to form wood to brace its own branches. Arborists used an air spade to get a closer look at the pine's root system. Over time, an excess of mulch had built up, and under the thick organic layer, the ground was hard and dry. They removed the excess mulch and added compost to stimulate root growth and improve the porosity of the underlying soil.

Bartlett donated thousands of dollars of arborist services in this single day of service. The dedication of support groups like Bartlett Tree Experts is instrumental in keeping the Arboretum grounds in good shape. Bartlett Tree Experts, headquartered in Stamford, CT, was founded in 1907. Bartlett has become a leading scientific tree and shrub care company and has offices throughout the U.S., Canada, Great Britain, and Ireland. Its chairman, Robert A. Bartlett, sits on the Board of Directors of the Friends of the National Arboretum.

#### Maryland Arborists Remove Hazardous Tree During Fall Field Day

In October, the Maryland Arborist Association (MAA) held its day-long Fall Field Day at the National Arboretum. Approximately 45 arborists attended the training that included removal of a hazardous tree on Hickey Hill near the Asian Collections. The field day provides an excellent opportunity for members of the MAA to both learn new techniques and to contribute valuable work. The mission of the Maryland Arborist Association, Inc. is to promote education in the field of arboriculture, to support the success of arborists, and to promote the importance of tree care. The MAA provides a forum for the exchange of information and encourages professionalism through the collective efforts of the members.



Maryland Arborist Association member removing a hazardous tree.



Perennial Panel members (from left) Stephanie Cohen, Paul Babikow, and Janet Draper.

#### Arboretum Hosts Perennial Panel

On November 19, 2004, the Arboretum hosted its first Herbaceous Perennial Plant Advisory Panel. The panel members were Stephanie Cohen, Director of the Landscape Arboretum of Temple University in Ambler, PA, and author of books and magazine articles about perennials; Paul Babikow of Babikow Greenhouses, Baltimore, MD; and Janet Draper, Horticulturist for the Mary Livingston Ripley Garden at the Smithsonian Institution in Washington, DC. The panel provided ideas for incorporating more perennials in existing collections and possible development of a new perennial garden. The panel also offered advice on improving existing perennial collections. Many of their suggestions will be implemented in the Introduction Garden and the Perennial Collection beginning in 2005.

#### Arboretum Scientist Breeds Japanese Snowbell for Later Bloom Time

Despite its many outstanding features, Styrax japonicum, Japanese Snowbell, is not widely grown in the U.S. One of the reasons this Asian native is not more widely planted is that it is subject to spring freeze damage, especially in areas of the country that experience fluctuating late winter and early spring temperatures. A scientist with the Floral and Nursery Plants Research Unit is conducting a breeding study with this species to try to reduce its susceptibility to spring freeze damage. Dr. Sandra Reed, who is located at the National Arboretum worksite in McMinnville, Tennessee, started this project by evaluating the time of budbreak on 224 S. *japonicum* seedlings. She rated percent budbreak on each plant during a 6-week period in 1999 and 2000, and then compared ratings between years. Both years, there was a four-week difference in time of initial budbreak between the earliest and the latest plants to break dormancy. Twenty-eight plants that broke dormancy late both years were selected for further evaluation.



Styrax showing early (left) and late (right) bud break.

The 28 selections, along with three cultivars—'Carillon', 'Pink Chimes', and 'Emerald Pagoda' were propagated and planted in a replicated trial where data was collected from 2002 to 2004. This trial was conducted at the McMinnville worksite, which is housed at the Tennessee State University Nursery Research Center. All of the selections broke bud later and suffered less freeze damage than 'Emerald Pagoda' and 'Carillon', but many performed similarly to 'Pink Chimes'. Variation in height, width, trunk diameter, and canopy shape was observed among the selections, providing an opportunity to select for plants with different growth rates and forms. Plants that were identified in this study as having reduced susceptibility to spring freeze damage and superior ornamental qualities are currently being tested for release as cultivars. They are also being used as parents in hybridizations to several *S*. *japonicum* cultivars for the purpose of combining delayed budbreak with unique ornamental traits such as weeping plant habit, pink flowers, and large leaf and flower size. The long term goal of this project is to develop *S. japonicum* cultivars with reduced susceptibility to environmental stress and superior ornamental characteristics, thereby expanding the use of this valuable ornamental in the U.S. landscape.

Styrax japonicum is a small ornamental tree with many outstanding attributes. Growing only 20 to 30 feet in height with a similar spread, it is a good choice for small residential lots and can even be grown near power lines.

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As it matures, the plant develops a rounded head with horizontal branching structure. The leaves are 1 to 3½ inches in length and ½ to 1½ inches in width. Foliage ranges from mid- to dark-green, may be lustrous, and is generally pest free. The bark is grayish brown, smooth, and provides winter interest. While *S. japonicum* is attractive all year, it really puts on a show when it flowers in mid- to late-spring. Abundant small (3/4"), pure white, fragrant flowers hang in clusters below the foliage, making the plant particularly attractive when viewed from below – as, for example, next to a patio or on a hillside. A few cultivars are available in the U.S., including one with a weeping habit ('Carillon') and a pink-flowered form ('Pink Chimes').



Styrax japonicum



Styrax 'Pink Chimes'

# Arboretum Staff Demonstrate Virus Detection Kits at Annual Trade Show

The Arboretum's Floral and Nursery Plants Research Unit will be highlighting and demonstrating easy-to-use virus detection kits at the annual Mid-Atlantic Nursery Trade Show (MANTS) in the **Baltimore Convention Center** January 5 - 7. The kits are designed to help growers select virus-free plants for propagation. Virus-free plants are typically more vigorous and of higher quality, benefiting both producers and consumers. The antibodies used in some of these kits were developed in the Unit and licensed for commercialization; these include one patented monoclonal antibody which detects almost all potyviruses, and monoclonal antibodies that detect and differentiate serotypes of cucumber mosaic virus.

Posters featuring the Arboretum's breeding programs will also be displayed, including one on current releases. An educational poster on Breeding Challenges will discuss scientific breeding, which is more than just crossing plants. It involves the use of genetic principles and a directed strategy to create new gene combinations. The use of genetic technology in scientific breeding allows one to overcome many of the challenges in creating new gene combinations. A few of the challenges include: 1) creating hybrids between widely divergent species, sexually incompatible parents, or parents with different chromosome numbers:

2) obtaining progeny from sterile hybrids, plants with very small flowers, or plants with little pollen; and 3) identifying genetically different seedlings from morphologically similar parents or with no visible traits like disease tolerance. The poster addresses how the breeders of the Research Unit have overcome some of these challenges to create and select superior plants for release to the industry.

MANTS is the largest trade show on the East Coast and has over 900 exhibitors from throughout the United States.



ImmunoStrips test kit.



Poty Group Test kits.

#### American Elm Researcher Retires

Dr. Denny Townsend, the scientist who is best known for developing disease-tolerant American elms. announced recently that he will retire at the end of January. Stationed at the Arboretum's site in Glenn Dale, MD, Townsend has worked for ARS for 34 years, and has been with the National Arboretum since 1984. In addition to developing the famous 'Valley Forge' and 'New Harmony' American elms that are highly tolerant to Dutch elm disease, he has also worked on maples, ash, alders, and hemlock, among other

With degrees from Penn State, Yale, and Michigan State, Townsend began his education informally as a teenager by growing birches collected from the field behind his family's home in New Jersey. He is known among his peers for his meticulous scientific standards and broad scientific knowledge, as well as his easygoing and positive demeanor.

Denny has been recognized for his contributions through several awards, including the Jackson Dawson Memorial Medal from the Massachusetts Horticultural Society, and Honor Award from the Secretary of Agriculture, an

Outstanding Alumnus Award from the Penn State School of Forestry Resources, and the Luther Burbank Award of the American Horticultural Society (see the Spring 2004 issue of News and Notes). Denny and his work have also been featured prominently in the national press, including USA Today, the Washington Post, and National Public Radio.

In order to insure the continuity of Denny's decades of research into the next generation, Denny has agreed to serve as a collaborator or advisor to the Arboretum as needed. Despite the fact that Denny himself won't be on site after January, the impact of his work will be felt by the National Arboretum, the Nursery Industry, and the American public for decades to come.

#### Support Scientist in Research Unit Retires

Ruth Dix, Support Scientist in the shrub breeding unit, will retire on January 6, 2005. Since she began her career at the National Arboretum over 20 years ago, Ruth has become an invaluable member of the shrub breeding team, the Floral and Nursery Plants Research Unit, and the entire U.S. National Arboretum. She is known among colleagues and peers for her plant knowledge, consistently high standards, and the personal pride that she brings to the workplace.

She is also infamous among Arboretum cohorts for her accumulated collection of pink flamingos in her office, as well as her legendary birthday cakes.

Ruth came to the National Arboretum in 1978 as a student working for Dr. Donald Egolf, from whom she acquired some of her inspiration and skills as a renowned plantsperson. Over the years her reputation as a plant propagator has grown such that requests for saving unique and highly visible germplasm have come directly to Ruth, including propagation of the historic Tidal Basin cherry trees, and saving the only known Gaylussacia brachycera (box huckleberry) plants in Maryland from extinction. She has been instrumental in the breeding and selection of several genera in the shrub breeding program including crapemyrtles, viburnum, witchhazels, flowering cherry, and lilac.

In addition to growing plants, Ruth has proven her competence as a writer in helping to design the popular plant "Fact Sheets" for the National Arboretum, as well as her regular introducing column for the FONA Newsletter. Ruth has also contributed to numerous scientific publications, and has been an invited speaker at local trade or nursery events. In 2002, Ruth received the prestigious Beltsville Area Support Scientist of the Year Award.

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