U. S. National Arboretum
News and Notes

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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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Exciting New Ornamental Flowering Cherry is Released

The National Arboretum introduced a new flowering cherry at the Southern Nursery Association annual trade show in Atlanta, Georgia, last August. The 'First Lady' flowering cherry was selected for its strongly upright growth habit and dark pink semi-pendulous flowers. It is the first in a series of flowering cherries to be named after First Ladies of the United States. With glossy dark green disease-tolerant foliage and an almost columnar growth habit with a mature height of 25 feet, 'First Lady' is especially well suited as a specimen plant, as a street tree, or in group plantings in residential, park, or public areas. This new selection is a product of the shrub breeding program of the arboretum's Floral and Nursery Plant Research Unit, and is still in the initial phases of production by commercial nurseries. It should begin to appear in retail nurseries and garden centers by 2007. More information on 'First Lady' is available on the arboretum's web site: www.usna.usda.gov/Newintro/awards.html.

Congress Holds Hearings on the USNA

The House Agriculture Subcommittee, Department of Operations, Oversight, Nutrition, and Forestry, held a hearing on the U. S. National Arboretum on October 21, 2003 at the request of House Agriculture Committee Chairman Bob Goodlatte . Witnesses that testified at the hearing were The Honorable Rodney P. Frelinghuysen, Member of Congress from New Jersey; Dr. Rodney J. Brown, USDA Under Secretary for Research, Education, and Economics; and Ms. Tuckie Westfall, Chairman of the Board of Directors of the Friends of the National Arboretum. The National Bonsai Foundation submitted written testimony. The half-day session focused primarily on funding issues and working with stakeholder organizations to provide for greater private sector funding for the arboretum. As a result of the hearing, efforts will be made to build greater public-private partnerships to support arboretum activities.

Agricultural Research Service Turns Fifty

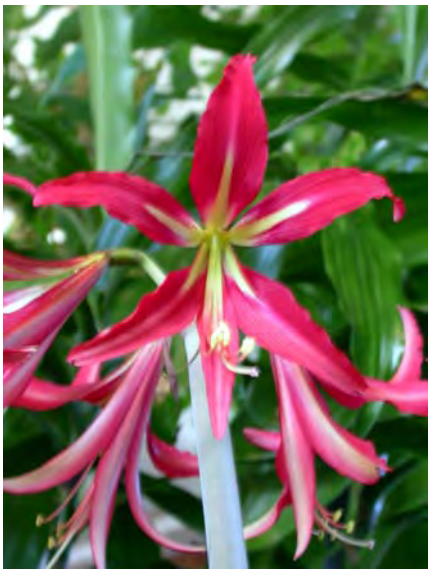
The Agricultural Research Service (ARS), chief scientific research agency of the U.S. Department of Agriculture and parent agency of the National Arboretum, marked its 50th anniversary on November 3.

ARS' accomplishments during the past half century include development of the leading mosquito repellent, development of vaccines to protect chickens from economically devastating diseases, creation of a key equation to reduce soil erosion, and the discovery of two new forms of life—viroids and spiroplasmas. Viroids are strands of ribonucleic acid (RNA) that can cause disease in plants and crops; spiroplasmas, which also are responsible for many plant diseases, are life forms with no cell wall and one of the smallest genomes of any living organism. The U.S. National Arboretum is an institute within ARS and contributes towards ARS' leadership in improving ornamental crops.

ARS is the largest agricultural science agency of its kind in the world, with more than 2,100 scientists conducting research at about 100 locations across the country and overseas.

While ARS was officially created in 1953, the agency has deep roots that go back more than a century. When Abraham Lincoln created the USDA in 1862, the founding legislation called for the new department to acquire "useful information connected with agriculture in the most general and comprehensive sense." Within four years, a Division of Botany was created, soon followed by the Division of Microscopy and, in 1873, the Bureau of Animal Industry and other scientific units. Many of these were merged in 1953 to form the core of today's ARS. For more information on ARS, visit the agency web site at www.ars.usda.gov.

USNA Presents Unique Amaryllis Exhibit



Hippeastrum 'Ruby Meyer'

Arboretum staff grew nearly 1,000 amaryllis to provide a dazzling floral display in the Administration Building lobby during the months of December and January. The exhibit, called *Deck the Halls with Hippeastrum: An Amaryllis Extravaganza*, features more than fifty species and cultivars of *Hippeastrum*, the genus name for amaryllis, and interpretive panels that outlined the history of the development of this increasingly popular holiday gift plant.

The story begins with the development of early hybrids between species discovered in the New World and chronicles the efforts of the U.S. Department of Agriculture in breeding improved amaryllis for the Easter market. After the quarantine of foreign plant materials eliminated imports of amaryllis in 1919, field production of the bulbs for the U.S. market shifted to Florida. Here, amateurs worked on breeding amaryllis, and it gradually evolved into a mass-produced crop with help from the USDA scientists who developed devices to save labor and time in field culture of bulbs. At the same time, the USDA was working to breed better cultivars. From the early 1900s to the beginning of World War II, the display of blooming amaryllis at the Department of Agriculture greenhouses on the mall at Constitution Avenue and 14th Street was a popular late winter event that even First Lady Eleanor Roosevelt attended. The greenhouse was razed and the breeding effort ended in 1940.

Part of the exhibit is dedicated to future possibilities for amaryllis—new and exciting flower types and colors, fragrance, and more blooms per bulb. Some of the newest varieties on the market are on display, along with rare species that may be used in future hybridization.

Research Creates New Turf Demonstration Area

The Floral and Nursery Crops Research Unit has established a new turf grass shade trial area at the arboretum, as part of the National Turfgrass Evaluation Program. The newly established area, located just below and to the west of the entrance to the Azalea Collections, is an evaluation of fifty different fine fescue cultivars under shade conditions. The trial is designed to provide data to interested parties about the performance of newly developed fine fescue cultivars throughout the United States. The arboretum is an outstanding location to evaluate shade tolerance of these grasses and will provide information for homeowners about fine fescue performance in shaded, low maintenance conditions. The area is designed to be a low input trial and will receive no pesticides and only minimal fertilizer applications. The trial will be watered only during establishment. Data will be collected on the level of shade that the site experiences as well as monthly ratings of the turf quality of each cultivar. The results of this demonstration area will be an improved understanding of fine fescue cultivar performance under naturally shaded conditions and will eventually lead to the development of new turfgrass species and cultivars for use in heavily shaded home lawns.

Pot-In-Pot Demonstration and Outplanting Project

An Above-ground Pot-in-pot system in a commercial nursery.

The Research Unit, in collaboration with Scott Aker of the Gardens Unit, is establishing a demonstration project on the arboretum grounds to compare the growth of several USNA tree introductions in a pot-in-pot production system with tree growth in conventional field conditions. Pot-in-pot production is the relatively new technology of growing trees in large pots that are supported by a socket pot that is either placed in the ground or placed on the surface of the soil with mulch bermed up around the socket pot. The result is that temperature extremes in the soil in the pot, which are a limiting factor to tree growth, are moderated by the surrounding soil or mulch. Trees grown in containers often have an advantage over trees that are balled and burlapped since they don't suffer root injury that field produced trees do when they are dug from the field.

The trees will be grown to sufficient caliper for planting and then planted along Washington, D.C., streets for on-going evaluation. Additional trees will be sampled to compare branch and root architecture under the different production systems. During the study, plants will be evaluated for height and caliper gain.

One of the long-term goals of this project is to develop partnerships to evaluate USNA releases for use as street trees.

Currently, cooperating nurseries, universities, and botanic gardens evaluate potential USNA releases for horticultural merit, pest and disease resistance, and adaptability to different hardiness zones and soil types. This is very important information for nurserymen and homeowners, and allows us to recommend the range of environments in which new releases should thrive as part of the landscape. However, trees used in street plantings are often exposed to additional stresses in the form of de-icing salts, soil compaction, high heat reflectance, additional air pollution, and physical injury.

Street trees are also commonly planted under utility lines and must be pruned to avoid or remedy interference with the lines. Several of the trees chosen for this study mature at heights that should minimize interference with utility lines. Recent storms felled thousands of trees in the region and caused major power outages. Interest in developing street trees that stay below overhead lines without pruning is at an all-time high.

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Few urban forestry departments have their own production nurseries, and there is therefore a need to establish cooperative projects such as this in order to evaluate trees for street as well as landscape usage. Determining which USNA releases can be grown well in pot-in-pot culture, and how well they stand up to conditions on city streets, will be important in expanding the utility of these cultivars. The information will be of significant value to urban forestry departments and to utility companies. The study is partially funded by the USDA Forest Service, through the Mid-Atlantic Center for Urban and Community Forestry.

Holly Society Visits Arboretum

The National Arboretum played an important role in the program for the 56th Annual Meeting of the Holly Society of America. The November 6-8 event included a keynote address by arboretum Director Thomas Elias. Elias discussed the arboretum's newly revised Strategic Plan. Following his lecture, the Holly Society presented Elias with a bronze plaque, that recognizes the arboretum's holly collection as an Official Holly Arboretum. The arboretum has played an active role in reporting holly data to the society for many years, and former staff members Ted Dudley and Gene Eisenbeiss both played significant roles in holly breeding, nomenclature, and registration and were active members of the Holly Society of America. Herbarium Curator Kevin Conrad treated the group to a talk titled "The Behind the Scenes Tour of Plant Exploration." On Saturday, the group arrived early at the arboretum for tours of the herbarium, the bonsai collection, and the holly collection.

Staff and Volunteers Pull Together on De-Vine Day

On October 15, the National Arboretum held a Volunteer Work Day to begin to address the serious problem of invasive plants in the natural areas. Approximately 35 employees and volunteers joined hands in clearing invasive vines and weeds at two sites on the grounds. The first group worked in the vicinity of the Heart Pond near Fern Valley, clearing the banks of a small stream and the adjacent area across the road. The second group worked at the point where the Spring House Lake empties into a small creek, and cleared three bald cypress of a massive entanglement of weedy vines. These two areas were selected because of the large quantity of invasive weeds and because of the high visibility of the areas. In preparation for the workday, staff removed poison ivy and thorny brambles, helping to make workday conditions as pleasant as possible. The group focused on cutting vines out of important collection specimen plants, cutting down weedy trees, and clearing invasives from areas not regularly managed by arboretum staff. An application of herbicide followed the clearing to keep weeds in check and to minimize re-growth. The group made great progress and succeeded in removing about 20 truckloads of debris. The next phase will be to replant with native flora to stabilize the areas.

Sue Martin addresses members of the Holly Society.

Arboretum's Largest Tree Receives New Lightning Protection

The Mid-Atlantic Chapter of the International Society of Arboriculture, the Maryland Arborist Association, and the U.S. National Arboretum co-sponsored a Lightning Protection and Aerial Rescue seminar at the arboretum on a perfect fall day in October. Morning lectures were given by Peter Becker and Joe Bones of Bartlett Tree Experts and Tim Brown of Davey Tree Experts. The afternoon included demonstrations and workshops given by Becker, Bones, Brown, and Robert Springer of Bartlett Tree Experts. These professionals performed an upgrade of an existing 15-year-old protection system in a 72" diameter willow oak and the new installation of a system in a 47" pin oak, services totaling over $5900 of donated time and materials. They also demonstrated and taught aerial rescue techniques. About 45 area arborists attended the day-long event.

Hurricane Responsible for Significant Losses

The U.S. National Arboretum suffered major damage as Hurricane Isabel roared into the Washington, D.C., area on Thursday afternoon and evening, September 18. Dozens of mature trees were totally destroyed and over 80 trees were badly damaged. What started as light rain in the early afternoon soon turned to driving rains and strong winds later in the day. The intensity of the storm grew, and by evening the heavy rain and wind gusts of 40 to 60 miles per hour continued to belt the grounds. The east and southeast facing slopes of the arboretum were hardest hit. Large mature oak, tulip poplar, and pine trees either broke near their bases or were uprooted as the heavy, wet foliage in the trees' canopies and rain-soaked ground overwhelmed the roots' ability to anchor the trees. Many trees fell under these conditions when the stronger wind gusts hit them. Fallen trees blocked roads and paths and numerous broken branches were left hanging dangerously along the paths.

Due to the efforts of arboretum staff and volunteers, most of the grounds reopened on Monday, September 22. Some parts of the grounds, however, remained closed and in need of professional arborist expertise. Fortunately, the Morris Arboretum in Philadelphia, PA, offered assistance and dispatched four top-notch arborists fully equipped to handle the most hazardous trees. The arborists worked three long days and enabled the Arboretum to reopen all but the Azalea Collection. The arboretum is grateful to the Morris Arboretum for providing this help at a time when arborists were in high demand.

The Azalea Collections took the brunt of the hurricane with over 14 mature trees down and several dozen with major damage. Fallen trees intertwined with the azaleas and unsafe conditions from leaning trees and dangling limbs will keep the collection closed until further arborist help is available.

Japanese Botanist Lectures on the Botany of Commodore Perry's Black Ships

In October, Japanese scientist Dr. Tetsuo Koyama presented an evening lecture at the arboretum on Commodore Perry's fascinating and little known excursions to the remote regions of Japan. One hundred and fifty years ago, Perry and his crew collected the plants that led botanists to conclude that the closest relatives of many Japanese plants are native to North America. In the mid-nineteenth century, Harvard professor Asa Gray studied Perry's specimens along with others and noted that there was a striking resemblance between certain plant species of eastern North America and those of Japan. Gray ultimately determined that 580 species of flowering plants demonstrated this floristic link between two remote regions of the world. Dr. Koyama showed examples of these plants and explained how later botanists have continued Gray's studies. Several of Perry's herbarium sheets were generously loaned by Harvard University for display in the arboretum's lobby. Dr. Koyama is Director of the Prefectural Makino Botanical Garden in Kochi, Japan, as well as Professor of Bioresource Science at Nihon University, Fujisawa City. He has also been a Senior Research Scientist at the New York Botanical Garden. Koyama has studied the relationship between Japanese and North American floras for many years and is one of the world's leading experts in the identification and classification of sedges and grasses. The standing-room-only lecture was co-sponsored by the Embassy of Japan, the U.S. National Arboretum, and the Kochi Prefectural Makino Botanical Garden.

Director Celebrates 10 Years at the National Arboretum

In late November, Dr. Thomas S. Elias celebrated his tenth year serving as the Director of the U.S. National Arboretum. During this period, even though the USDA was undergoing a considerable downsizing, the arboretum maintained its staffing level and increased its annual budget. The arboretum's research program has received greater public awareness and has expanded with the addition of a new turf grass research program. Under Elias' leadership, a new Master Plan and Strategic Plan (including a recent update) were developed to help guide the arboretum's programs and numerous improvements. Education and visitor services programs were greatly expanded with the addition of new staff, additional volunteers, expanded hours the arboretum is open to the public, improved maps and guides to the arboretum and its collections, and more special events and classes for the public. Elias also spearheaded the development of a web site for the arboretum, which now is attracting a greater national and international audience and receives approximately 1.5 million virtual visitors annually.

Numerous major improvements to the grounds occurred during Elias' tenure, including a renovation to the National Herb Garden, improvements to and expansion of the National Bonsai and Penjing Museum, the installation of an automated irrigation system, and lighting in parking areas. Visitors frequently comment, too, that the appearance of the grounds has greatly improved; Elias has encouraged the use of sound environmental management practices, resulting in the arboretum becoming a model of federal land use practices. Elias was able to obtain expanded new authorities from Congress that allowed the arboretum to seek and obtain greater levels of support from the public, such as volunteer service, gifts in kind, and funds to help support operations and maintenance. These non-federal resources have proven invaluable in helping the arboretum to maintain and expand its mission.

Elias stated, "While the first ten years have passed quickly, I am very pleased with the progress we've made and look forward to many more significant accomplishments in the future. We want even more people to know about the arboretum and to benefit from its leading programs in research and horticulture."

Jarvis Retires after 37 Years at USNA

Special Events and Volunteer Coordinator Mary Ann Jarvis will leave the arboretum on January 2nd after 37 event-filled years. In 1966 she was hired as a secretary for the education office; she retires as the leader of a flourishing volunteer program and a veteran of hundreds of expertly planned events. Jarvis also became the arboretum's master of public relations, establishing relationships with a wide range of press contacts, who came to trust and rely on her exceptional ability to package a story. Newsletter readers will recall that in the last issue her efforts as volunteer coordinator were recognized with a prestigious Secretary of Agriculture's Honor Award. It is the second individual award earned by an arboretum staff member. Throughout her career, Jarvis received numerous other awards, but when asked what has meant most to her she stated, "I'm one of the fortunate people who found her niche early in life. I've always enjoyed working with people and what an absolutely beautiful place I've been fortunate to spend my career in." A retirement event is scheduled for January 14th at 2 pm at the arboretum.

Research Plant Pathologist Position Open

The Research Unit is seeking a Research Plant Pathologist to fill a vacancy left when Dr. James Locke moved to another ARS position in Ohio. The new scientist will continue two programs of importance to the floral and nursery industry, and will be based at Beltsville.

One aspect is to identify alternatives to methyl bromide, which has been used as a pre-plant soil fumigant for many crops including field-grown cut flowers. However, methyl bromide will no longer be available to growers because it has been shown to deplete the ozone layer. Alternative chemicals are being sought to replace it, with the emphasis on reduced risk chemicals, including botanical extracts. It is unlikely that an acceptable single chemical can be found to replace methyl bromide, so combinations of different botanical extracts and other reduced risk chemical will be examined, in conjunction with cultural methods, to determine the efficacy of disease control in floral crops.

The second responsibility of the new scientist will be to oversee testing of agrochemicals to permit label expansion for ornamental use. Pesticides and herbicides can only legally be used on crops for which they are labeled; the chemical manufacturers carry out testing to obtain labeling on major agricultural crops, but not so-called minor crops, which include all of the floral and nursery crops. Testing to expand label registrations to include minor crops is carried out by a network of ARS and university labs, and the Research Unit is one of the main participants in collecting data for label expansion for ornamental crops.

More details about the position are available online at www.usna.usda.gov/Research/PlantPathPosition.html.