

Volume 27 • Number 3 • Fall 2005

*The*

# *Azalean*

*Journal of the Azalea Society of America*

**Report on the Azalea Society of America  
2005 Annual Convention**

**Polyploidization of Evergreen Azaleas**

**The Schroeder Azalea Hybrids**

**Keeping Track of Your Plants**

**Hillwood Museum and Gardens**



1000 Moody Bridge Road  
Cleveland, SC 29635

# President's Letter

Robert (Buddy) Lee — Independence, Louisiana

Seems like it's been a long hot summer this year or maybe I was just getting tired of the irrigation routine on those hot dry days. My azaleas have had their share of pest and other problems. However, all and all, they have come through the heat and summer stress as good as ever. It still amazes me how most evergreen azaleas can survive during harsh conditions. Now with that "touch of fall" in the morning air, it's more comfortable to be outside as I care for and prepare my azaleas for those cold blustery days of winter. Each season brings its enjoyment and also its work.

## Comments after Hurricanes Katrina and Rita

It sure is a reality check when a huge natural disaster strikes. Priorities can change overnight, and hobby and leisure time activities take a back seat to more pressing concerns. I must confess that for the first few days after Hurricane Katrina, I was in shock and disbelief at the devastation, and azaleas were not on the top of my to-do list. Then along came Hurricane Rita. To all our Society members who were affected by these two storms, my wish is that you have recovered from the damage and have some extra time for gardening and other leisure activity. It sure helps relieve the stress caused by storm damage and displacement. Also, a great "thank you" to all the con-

cerned members who sent their thoughts and prayers during this time.

I have commented before on how amazed I am about the harsh conditions and stress that azaleas can endure and still perform well. After Katrina I still stand by that comment. Most azaleas fared well during the storm, especially if they were well established in the ground. Some container azalea losses occurred for nurseries and collectors after the storm because there was no electric power to water the plants. High temperatures in the 90s and no rain for weeks after the storm only added to the difficulty of caring for the azaleas. In some cases, there were just too many downed trees to get to the plants. However, I have found some things that can really do some damage to azaleas, and they are track hoes, bobcats, tractors, and some young enthusiastic equipment drivers. The combination of these four things can get really interesting when trying to get 50-plus trees out of your nursery, yard, and azalea garden. I'm just kidding; those guys were great, and I have a brand new perspective on garden design. Every day can bring its learning experiences. Hope everyone is doing well.

Best regards,

Robert (Buddy) Lee  
Independence, Louisiana

# Azalea Society of America

The Azalea Society of America, organized December 9, 1977 and incorporated in the District of Columbia, is an educational and scientific non-profit association devoted to the culture, propagation and appreciation of azaleas Subgenera *Tsutsusi* and *Pentanthera* of the genus *Rhododendron* in the Heath family (*Ericaceae*).

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Regular membership is open to all interested parties for an annual amount of \$25.00; life-membership for an individual is \$500.00. Members receive *The Azalean* and are eligible for participation in all activities of the Society including those of the chapter with which the member affiliates. For information and a membership application, write to the Membership Committee, Azalea Society of America, 1000 Moody Bridge Road, Cleveland, SC 29635.

## Wanted Good-doer Lists from Flood Zones

Those of you whose azalea gardens or nurseries have survived the flooding, please send lists of those that withstood flooding. Tell us whether the water was fresh, saltwater, or brackish and how many hours (or days) the flooding lasted. Send lists to the Editor at the address shown on p. 51.

# The Azalean

Journal of the Azalea Society  
of America

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## On the Cover

'Doctor Henry Schroeder' is a superior example of the evergreen breeding program that the late Dr. H. R. Schroeder, Jr. of Evansville, Indiana, began in the early 1970s. This lovely strong purplish pink (55B) has 2-1/2" flowers on an open shrub with spreading upright habit (18' x 24' in 10 years). Bred for cold hardiness in the Midwestern USA, this azalea has good evergreen foliage retention in the winter. This is a product of 'Mildred Mae' x 'Avalanche'. To learn more about the Schroeder hybrids, see the article on p. 63 in this issue. (Photo by Jackie Cottom.)

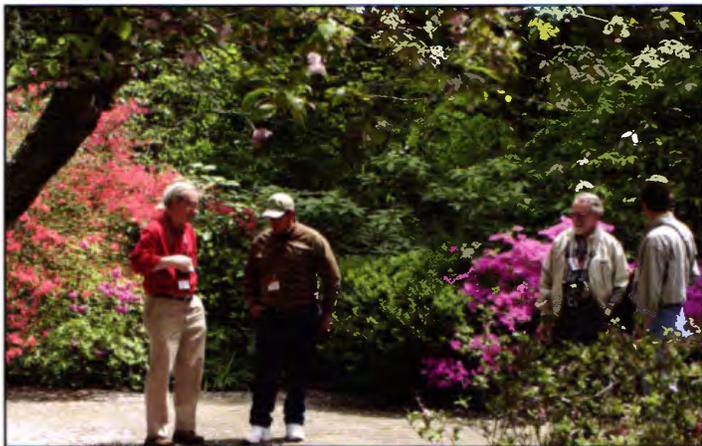


# Report on the Azalea Society of America 2005 Annual Convention Holland, Michigan, May 19-22, 2005 Hosted by Lake Michigan Chapter

Joseph E. Schild, Jr. — Hixson, Tennessee

*[Thanks to Joe for this report, which appears here courtesy of the Tennessee Valley Chapter (TVC) of the American Rhododendron Society; this article was published in their June 2005 newsletter, Ed.]*

For those of us who may have never thought about rhododendrons and azaleas growing in the far northern climate (Zone 6a) of Michigan, this convention was a rare treat. I must say here that I was not only surprised, but was also mesmerized by the wide variety of plant material growing so close to the sandy shores of Lake Michigan.



A beautiful sunlit patio strewn with cherry petals, enjoyed by Dan Krabill, Buddy Lee, and Jim Campbell.  
*(Photo by Barbara Stump)*

My journey started a day early so I would arrive in time for a board of directors meeting scheduled for Thursday at 2:00 pm EDT. Yep, they are on Eastern Time, not Central. After spending a night in Fort Wayne, Indiana, I finished my drive in a torrential rain and arrived in time to relax and enjoy the company of many azaleaphiles and old friends at the Holiday Inn, Holland.

From the mission statement of the Lake Michigan Chapter, they, the members, strive to stimulate interest in, and appreciation of, azaleas through the study of azalea culture including selection, growing, hybridization, and propagation. This chapter covers a large geographic area, including Michigan, Wisconsin, Illinois, Indiana, and other parts of the Midwest.



One of the features of the late Dr. Charles Mann's mature garden was the "tunnel" of azalea bloom we were able to walk through.  
*(Photo by William C. Miller III)*

Like most azalea nuts, I could hardly control my interest in the plants being offered at the plant sale area. A large room was filled with the colorful blooms of many hybrids, varieties, and species of azaleas, and a full, long table of companion plants to further whet the appetite. Though the sale had not yet opened, I did venture inside for a look and noted some plants I wanted to come home with. There were hard-to-find azaleas such as Schroeder hybrids, Stanton hybrids, Northern Lights series,



Vickie Snyder shown in John Migas's "azaleas woods" considering her next photograph. (Photo by Barbara Stump)

Cherokee series, along with many of the hardy evergreens and of course our very own TVC member William 'Bill' Pinkerton's new introduction 'Clara Haler'.

Once I was registered and received my official badge, my gift tote bag was stuffed with goodies and ample brochures about the convention schedule and local attractions. A handful of sweet treats would allow me to snack as we rode the tour bus.

One of the penalties of serving on a board is that the plant sale opens while we are making decisions about the future of the ASA, so by the time we adjourned, many of the plants I wanted were being taken to rooms or vehicles



Group photo taken by one of our very brave bus drivers from the roof of John Migas's house. (Photo by Barbara Bullock)

of very happy members. I saw several gleeful members loping across the parking lot with plants in hand. One borrowed a hotel luggage cart to handle the load. Oh well, I do now know the growers of those azaleas and will contact them directly for plants.

After an evening meal in the well-managed hotel restaurant, I arrived at the meeting room for the first round of excellent speakers and welcoming statements by the Lake Michigan Chapter president, John Migas. His attention to detail really made this convention a wonderful experience and one I will not soon forget.

Our first speaker was Carol Hop, who with her husband

Bruce, owns and operates Wavecrest Nursery. Carol's program on Michigan Plants was fascinating and highly informative, because she has gained a vast knowledge of the plants that do so well in her state. She followed in her father's footsteps and opened the Garden Center and Barn Owl Gift Shop at the nursery in 1972. Using her skills in art and landscape design, she has also developed a thriving garden design service that complements the fine selection of plants being produced through the nursery.



Lake Michigan Chapter president John Migas was tireless in his attention to details during the convention. Here he gives a thumbs up to Barbara Bullock, photographer.



Bill Miller and Dave Nanney on the shore of Lake Michigan after lunch at the Hop's. (Photo by Barbara Bullock)

Our second speaker of the evening was Robert 'Buddy' Lee, current president of the ASA and developer of the Encore™ Azaleas now marketed through Flowerwood Nursery in Loxley, Alabama. "What's New in Plant Breeding" was his topic, and he gave a great program on the subject with many digital slides of the colorful azaleas he is working on.

I guess the only negative note worthy of mention was the digital projection system. The hotel's projector did not render the slides in the true vibrant colors of the original digital photographs or the actual plants, so we had to use some imagination to visualize the slides.



The tall pines and evergreen azaleas at John Migas's were a wonderful, cooling way to see his nursery's stock blocks. (Photo by Barbara Bullock)



Hutchinson Garden with pool in foreground. (Photo by Vickie Snyder)

The first evening of speakers was adjourned with much anticipation of the next day's garden tours. As with most conventions, much socialization at the bar and in the various rooms provided ample opportunities to exchange ideas and reunite old friends.

Friday morning dawned bright and sunny, a perfect day for touring. I was eager to see the gardens on the full schedule. Our first stop was a short drive on the tour buses to

highlight a stunning pond and gazebo set amongst white dogwoods. The Japanese maples near the house truly enhance the setting. My regret is not having enough experience with my digital camera to get it working properly at this garden, so I only have two pictures of it to record the actual beauty.

The camera problems carried over to the next garden, the **Hartsuiker Garden**, located on the east side of town and owned by Pete and Trevah Hartsuiker. Though a



Lunch line at the Hop's. Yes, that blue line in the background is Lake Michigan. (Photo by William C. Miller III)

**Windmill Island**, a 36-acre island of manicured gardens, dikes, canals, and picnic areas, that is visited by guests from all over the world. This garden is the highlight of the Holland, Michigan, Tulip Festival in May each year, and is well worth the time spent strolling the manicured gardens, pathways, and seeing the authentic windmill.

small garden compared with many others we saw or will see, they created a masterpiece with the assistance of long-time friend Ross Alexander, their friend, pharmacist, and landscape designer. With mature oaks as canopy, the garden features many azaleas, rhododendrons, ornamental trees, shrubs and perennials. A large pond with fountain is the centerpiece, and around the property are ample structural features that make this a popular spot for social functions and family gatherings. The influence of purple colors is perhaps the strongest of any garden we saw.

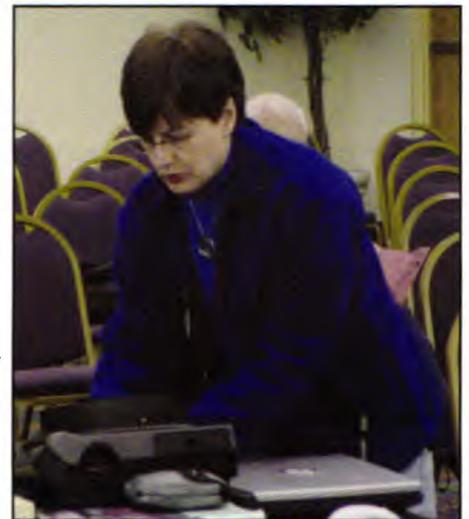
By this time, most of us were hungry for food for the belly and willing to postpone the eye candy for a while. We arrived at the **Hop Garden**, home of Bruce and Carol Hop, which is located on the eastern shore of Lake Michigan. Did I just say postpone the eye candy? To get to the home and excellent meal of roast pig and all the trimmings, we had to stroll a long



Bob and Bee Hobbs at the Alexander Garden. (Photo by William C. Miller III)

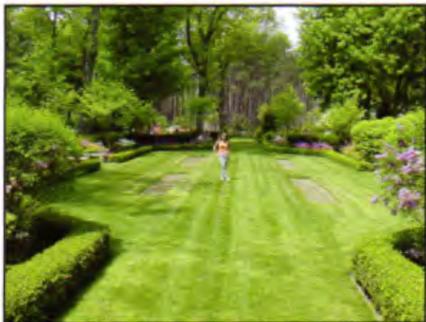
Stop two was the **Alexander and Hutchinson Gardens**, in Fennville, Michigan. These two gardens are located across the street from each other. I chose to first tour the Ross Alexander property that featured many azaleas and rhododendrons, along with dogwoods and Japanese maples, sitting amongst eastern white pines planted over 20 years ago. This garden has many delights to please the eye.

The Hutchinson garden is in four acres on a property of over 30 acres. It is bucolic, with wide-open spaces that



Leslie Nanney helped get the Holiday Inn's digital projector to work so we could enjoy the full effect of Dr. Stan Hokanson's presentation on the Northern Lights azaleas.

(Photo by William C. Miller III)



Barbara Bullock in the formal garden at John Migas's, which is a tribute to the Ben Morrison Garden. (Photo by William C. Miller III)

Michigan. It is no wonder it is called a great lake, because it looked more like an ocean.

To my relief, I was able to get my camera to work properly again and took many photographs to capture this exquisite garden. Once we were stuffed with down-home barbeque, we gathered for a short stroll across the street to **Wavecrest Nursery**, owned by Carol and Bruce.

It did not take me long to see this nursery was high end and offered visitors and clients an opportunity to see thousands of plants in landscape settings. They specialize in rare and unusual plants and grow over 1,400 different varieties of hardy trees, shrubs, and many of their own hybrid selections. The nursery offered golf cart rides to a few folks with leg problems, making the visit more enjoyable for them. The garden center held many unique plants and was tempting, as was the gift center with the unusual floating stones for water gardens.

The **Button Art Gallery**, the home of Arthur Frederick in Douglas, was our next stop. Though the building was under remodeling, we were treated to a beautiful English style garden with many design features made 38 years ago by Saugatuck horticulturist and landscape architect Charles Mann. Commissioned by the Gallery's founder, Russell Button, to create a natural garden, Mann used accents of rhododendrons, azaleas, flowering trees and a multitude of natural plantings. The stone walls and paths added structure and form to an exquisite sunken garden with a bound-



We were quite a crowd at Rosebay Nursery. —Note the azaleas field-grown and the hoop house propagation frames in the background. (Photo by William C. Miller III)

ary of fern, holly, heather, mountain laurel, birch, dogwood, and lilies.

It was not until we re-boarded the buses that I realized the trouble with my camera was the tight-fitting carrying case and me. The camera fit so snugly that putting it in and taking it out of the case moved the settings knob and changed how the camera functioned. I got no pictures of this garden and will most likely rely on others who did for any photos.



Exbury 'Golden Oriole' really lit up the side of the garage at John Migas's.

(Photo by Vickie Snyder)

**Rosebay Nursery** was our next and last stop on this very full day of touring. It was founded in 1977 by Linda Charvat and Frank Pluta on 14 acres and has 24 polyhouses and 27 sunken propagation frames. As a wholesale nursery, they grow rhododendrons, azaleas, and *Pieris* for varied growing conditions. Test gardens around the house attest to the growing and landscape skills of its owners.

They propagate nearly all of the plant stock in the sunken poly-covered frames. The plants are then field-grown under different shade conditions according to their needs. This information is passed on to their customers to help them in designing and recommending different varieties. I learned that they are blessed with sandy loam that is 30 feet deep, deposited by the glaciers from the ice age. As we toured the nursery, a worker was spreading pine bark with a manure spreader that he would later till into the deep soil. One field of about three acres is covered with weed block fabric and is used to store 60 varieties of rhododendron and 15 varieties of deciduous azaleas that are field-potted. They sell around 100,000 plants a year, mostly as balled and burlapped plants.



Dave Hinde and Dr. Stan Hokanson enjoy the view of Rosebay Nursery. (Photo by Barbara Bullock)

The bus ride back to the hotel was short, and though we had toured five gardens I was not tired. I had gained a new respect for the 'Michiganders' and their gardening skills, and this was only the first day of tours. Dinner was enjoyed by many new and old friends followed by the evening session of speakers Lee and Kay Ver Schure on "Companion Plants" and Bill Pinkerton on "Landscaping with Glenn Dale Azaleas."

Due to a minor stomach affliction, I missed most of Kay's presentation, but was able to catch Bill's. He presented a slide show with descriptions of his beautiful azaleas and rhododendrons in the landscape. A lively Q & A session followed and Bill ably handled all the queries about his high-elevation growing conditions that are not far removed from those of Michigan with its low winter temperatures. The evening session adjourned, and I decided to seek the sanctuary of my hotel room for the night and rest.

On Saturday morning, after a restful night, we started our second day of tours. The first stop of the day was **Veldheer's Tulip Farm**, Holland's only tulip farm and perennial garden. Established in 1945 by Verne Veldheer,



We arrived in Holland, Michigan, just after the annual Tulip Festival, but the fields were still incredible lines of color.  
(Photo by William C. Miller III)

it started as a hobby and evolved into a business with plantings of over four million bulbs each year with 400 kinds of tulips, 120 kinds of daffodils, 200 kinds of accent bulbs, and 400 kinds of perennials. The nearby outlet store offers packages of all their bulbs. Row upon row of bedded tulips presented an irresistible opportunity for vivid photographs and the cutout Dutch figures offered many fun headshots. Complimentary bags of bulbs were given to all the tour members.

Our second stop was at the **Willis Garden**, owned by Eric and Deona Willis, who became owners of the home built in the mid-1940s. The moment I stepped from the bus, I knew this garden was special. I also realized shortly that the memory card in my camera was out of memo-

ry and that my spare was buried in my daypack still on the bus, which was pulling away for a turnaround. My old Kodak Brownie Hawkeye was never this much trouble.

Without photos, you will need to rely upon my description, so do not trip on the many adjectives I may choose to use. The Willises bought the property

in 1997 and realized they had a jewel. With the help of former owners, they developed the original landscape with its boxwoods, yews, junipers, viburnum, dogwoods, and an abundance of wildflowers, azaleas and rhododendron. A water feature was added and the garden area tripled in size to include most of the five acres now planted with *Stewartia*, bamboo, ornamental grasses, new azaleas, rhododendrons, and Japanese maples. This garden is an excellent example of modern landscaping.

Back on the bus and with my new memory card inserted, we drove to the next stop, the **Flower Basket**. This garden created by Charles and Lorna Mann surrounds their home of over 60 years. They were the first in Saugatuck, Michigan, to successfully grow rhododendrons, azaleas, and hollies, and it is well established that it was the most beautiful garden in the Midwest.

Situated on a high bluff overlooking the Kalamazoo River, the one-acre formal garden is divided into rooms and outdoor living areas. The vistas change as one strolls the garden, and one gains new perspectives through elevation and landscape changes. Across the street are the six acres that were the Mann's nursery. John Migas explained to us that he and two more investors bought the property to preserve its beauty and historic nature. Some members chose to stroll the distance across the open meadow to John's home and nursery, our next stop for lunch and garden tour. I stayed with the bus and rode the short distance.

The **John Migas Garden and Nursery** was our next stop for the day, and it was a fine example of combining a garden with business. This property covers 15 acres with the garden in six. This property is set apart with borders of boxwood hedges, rhododendrons, azaleas, many more native and exotic shrubs, and wide expanses of lawn. Here, John has been growing and testing azaleas and rhododendrons since 1985. At the 1997 ASA Convention in Atlanta, Georgia, he became enthusiastic about



Brilliant red deciduous azalea seen in display plantings at Rosebay Nursery; alas, unlabeled.  
(Photo by Barbara Stump)

hybridization and continues in that effort.

Tall, straight red pines planted in rows over 60 years ago create a cathedral-like effect and shelter the azaleas and rhododendrons from the Lake Michigan winds. In the woodlands behind the open area, John has planted many of his rhodos for landscape sales. His attention to detail also included raking the pathways to make it look better, if that is possible. Our lunch of barbeque with hot dogs and hamburgers was devoured with hunger after another grand morning.

The **Alexander Garden** was our last stop of the day and was well worth the wait. The home and garden of David Alexander and his family is set upon two acres with the house centered and the gardens surrounding it along the perimeter. Raised beds show off his azaleas, rhododendrons, and numerous other shrubs and specimen trees to best advantage.



Deciduous azalea at Rosebay Nursery. (Photo by Barbara Stump)

David is the son of Ross and Edna Alexander whose garden we also toured, and he learned much from his parents about landscape design. The garden provides ample area in which their two young children can play and have fun, even in the midst of wonderful plants.

It being late in the day, our tours were finished, and we returned to the hotel for the evening session, banquet, and national meeting. After a brief rest and change of clothes, but not into a tie and suit by choice, I located a chair in the main room for our evening session. As the members entered, the room was buzzing with anticipation over the keynote speaker's program and the national meeting.

The Lake Michigan Chapter, through the hotel, provided a wonderful repast of excellent food, which was consumed with ample conversation along the way. John Migas introduced our speaker, Stan C. Hokanson, Ph.D., assistant professor in the Department of Horticulture Science at the University of Minnesota.

Dr. Hokanson's program was on the Northern Lights series azaleas and was wonderfully accompanied by a

Power Point presentation. I learned more about the Northern Lights series than I thought possible and will consider adding them to my own garden if I can find the room. By the way, those azaleas were the first to be sold at the plant sale and were quickly gone.

The national meeting was disposed of quickly, and Bob Stelloh was awarded the ASA Outstanding Service Award, along with a new mega-memory PC to aid him with his work on the ASA Web site. Next came the long awaited plant auction, and I came away with two outstanding azaleas, even though I protested that I was only scratching my nose. John Brown, the ASA secretary, is one heck of an auctioneer. We soon adjourned after the lively auction that raised needed funds for the chapter.

Though I wanted to stay over on Sunday morning for the board meeting and Propagator's Roundtable, I knew I had a long drive ahead of me to reach home before dark, so I left Holland with many fond memories to carry me home. Though my adventure is over, I will look back on it and remember the many great people of the Lake Michigan Chapter who made it all happen.

Following are many links to the attractions of the Holland, Michigan, area. I am making a computer slide show on CD-RW that may be played on a computer or through most DVD players to view on your television. If you want a copy, please let me know. The price of \$10 will cover the expense of the copy and postage, with a little left over for the Tennessee Valley Chapter treasury. There are about 155 color slides in the show. My telephone number is (423) 842-9686 or send the check or cash to Joe Schild, 1705 Longview St., Hixson, TN 37342.

The City of Holland, Tulip Time:  
<http://www.tuliptime.com>

The Holland Chamber of Commerce: <http://www.holland-chamber.org>

The Saugatuck-Douglas area: <http://saugatuck.com>

Artist, Eddie Mitchell: <http://www.eddiemitchellart.com>

Windmill Island: <http://www.ci.holland.mi.us/windmill> or  
<http://www.hometownvalue.windmillisland.htm>

Wavecrest Nursery: <http://www.wavecrestnursery.com>

Veldheer's Tulip Farm: <http://www.veldheer.com>

*Joe Schild has been an avid grower, propagator, and breeder of azaleas for nearly 35 years. He has owned and operated a niche nursery specializing in the species for over 14 years. Joe is the current president of the Tennessee Valley Chapter-ARS, past president of the ASA, and a member of the Tennessee Nursery & Landscape Association. He says he is better known as an azalea nut and chases the natives' bloom each year with many fellow enthusiasts. He is a frequent contributor to **The Azalean**.*

# Many Thanks for the 2005 Convention

John Migas — Saugatuck, Michigan

On behalf of the Lake Michigan Chapter I thank all the attendees to our recent ASA convention held in Holland, Michigan. Also, many thanks to the weatherman for the perfect week. On the last day of the convention, rain came steady and heavy. By the Monday after the convention, most flowers had fallen off. Talk about perfect timing.

Our volunteers deserve mentioning, starting with **Barb and Robert Wetzell**, for putting the “welcome bags” together; **Sharon and Dan Kunst**, for working the plant sale room; **Tad Dauksza**, for the plant list; **Rocky Voci**, for the program; **Sandra Wearne**, for a great job on the Web site; and many thanks to **Joe LaMantia** for registration.

Thank you to our garden stops: the staff of **Windmill Island and Veldheer Tulip Farm**; the **Alexander family**; the **Hartsuikers**; **Robert Hutchinson**; the **Hops**; **Karen and Herb Tews** of the **Button Gallery**; **Linda Charvat** and **Rosebay Nursery**; the **Willis family**, and the **Flower Basket**.

Many thanks, once again, to **Carol and Bruce Hop** along with the staff of **Wavecrest Nursery** for hosting lunch on Day 1 of the tours. Also thanks to **Joe LaMantia**, **Rocky Voci**, and my brother **Dan Migas** for preparing lunch on Day 2. I hope the choice of stops and the meals for lunch were satisfying. Thanks to **Brian Lernowich**, and **Tom and Chris Mallory** for following behind the bus to pick up any lost visitors. Thank you to **Dave Gregersen**, **Stacy Honson**, and **Dick Bont** for monitoring the par 3 contest, which was won by, you guessed it, **John Migas**, who practiced that shot for many weeks. Thanks also goes to **John Brown** who helped with the auction on Saturday night and who was our auctioneer.

Thanks to our speakers: **Carol Hop**, **Buddy Lee**, **Bill Pinkerton**, **Lee VerSchur**, and **Dr. Stan Hokanson**.

Thank you **Holiday Inn** and **Cardinal Bus Service**.

I thank **Buddy Lee** and **Bill Pinkerton** for helping out with stocking the plant sale room. Both Buddy and Bill arrived a few days early with the thought of sightseeing, rest, and relaxation; but, you guessed right again, I put them to work.

Once again, thanks to all who attended and all who volunteered for a very successful convention. Also, many thanks to the ASA board for giving our chapter the opportunity to host the 2005 convention. It was a lot of work, and an event I will always remember.

*John Migas, from Saugatuck in southwestern Michigan, was the driving force behind the Holland, Michigan, ASA convention. John has a harsh climate and short growing season to contend with when growing his 250 varieties of azaleas and 150 varieties of rhododendrons. He has been a member of the Society since 1996, but has been growing azaleas for 10 years and hybridizing them for three. He runs both a general contracting firm and a primarily wholesale nursery. Most of his sales have been to landscapers and retail nurserymen in the area, who are very surprised to find the broad range of azalea cultivars he is successfully growing in his five-acre display gardens. He has found membership in the Society to be very rewarding, and he hopes to increase interest in the ASA in his area, and to increase the activity of the Lake Michigan Chapter.*

## Polyploidization of Evergreen Azaleas

Caitlin Klimavicz — Vienna, Virginia

### Introduction

The characteristics that separate polyploid azaleas from diploid azaleas are the tendency of polyploids to have thick leaves and petals, dark green foliage, blight-resistant flowers, long-lasting flowers, increased opportunity to cross with deciduous azaleas, and a better marketability due to the fact that they look healthier year round (1). The purpose of this project, spanning over two years, was to determine

a reliable and easily repeatable way to produce polyploid azaleas.

Diploid azaleas have 26 chromosomes (13 pairs). The greatest number of chromosomes ever recorded was 152 (76 pairs) (2). Some well known polyploids include: ‘Haru-no-sono’, ‘Wako’, ‘Taihei’, and ‘Getsutoku’. There are two types of polyploid azaleas, allopolyploids and autopolyploids. Autopolyploids are

usually sterile because of the odd number of chromosomes, while allopolyploids are usually fertile (3).

I have worked with my father for many years on a hybridization program aimed at developing sturdy azalea varieties that are better able to survive neglect and still look good. Specific hybridization objectives include a plant that is vigorous, disease- and insect-resistant, florifer-

ous, and has a flower that is long lasting. Polyploidization should help us reach many of our goals. Prior to my work on this project, our efforts to produce polyploid azaleas were limited to cross-pollination, and the results were relatively poor.

Azalea hybridizers sometimes wonder why a specific cross results in significantly lower germination rates when compared to other crosses. Early in this project, I designed an experiment to prove that when seeds have an abnormal number of chromosomes then germination is extremely limited. This phenomenon appeared to be directly related to whether one of the parent plants was a polyploid azalea.

In an attempt to find an easily repeatable method to produce polyploid azaleas with correspondingly higher germination rates, radiation was administered to the seeds before germination. Radiation is just one experimental technique to induce polyploidy. Many techniques have been tested, and the most successful to date has been treatment of the plant with colchicine chemicals. However, this technique is difficult in application and the results are often inconsistent (2).

### Procedure

Seeds from known diploid and polyploid azaleas were collected and tested to determine if more diploid azalea seeds and X-rayed azalea seeds would germinate than polyploid azalea seeds. The seeds were then divided into three groups, each weighing 1.7 grams: two diploid groups and one polyploid group. One diploid group was X-rayed ten times (total of one second) at 15.0 mVs (millivolts per second). The X-ray machine, 123 kVp (kilovolts per second), was set 41 cm away from the envelope. Each group of seeds was planted in a separate container. The containers were placed under grow-lights and watered. After the seeds germinated, the number of seedlings in each container was counted.

Stomata measurements were taken to determine if the seeds that were X-rayed are polyploids. To measure the stomata of the azaleas, a microscope was calibrated using a micro ruler and the lines built into the eyepiece. Then leaves were collected from the plants to test. The leaves were labeled with a permanent marker on the topside of the leaves. The underside of the leaf was painted with clear nail polish. When the nail polish dried, it was peeled off the leaf. The clear piece of nail polish was placed on a clean slide with a drop of water. A cover slip was placed on top. Excess water was squeezed from under the cover slip, and the slide was labeled with a permanent marker. The slide was placed under the microscope and the microscope was focused on the leaf's stomata. The lines in the eyepiece that were calibrated earlier were used to measure the length and the width of three different stomata on each leaf.

### Results

The number of seedlings in the diploid container that was not X-rayed was 264. The polyploid container had only one seed germinate. The X-rayed container had nine seeds that germinated. Seeds with an abnormal number of chromosomes do not germinate as readily as normal diploid seeds, therefore making polyploid azaleas more difficult to hybridize. The experiment determined that loss of germination was directly related to whether one of the parent plants was a polyploid azalea. There was also loss of germination in the X-rayed seeds, yet not to as great an extent (see Figure 1).

The next phase of the project was to determine if the X-rayed azaleas were actually polyploid. Stomata measurements can be used as a means for determining if an azalea is a polyploid. Based upon the two major groups of points, it appears that the X-rayed azaleas are polyploids. A statistical t-test was performed to determine if the two populations were statistically different. The test confirmed that they are dif-

ferent populations (see Figure 1).

Azaleas normally have two nuclear organizers. This picture clearly shows the four nuclear organizers present in the nucleus of an X-rayed azalea root tip cell (see Photo 1). This is also strong evidence that there are more chromosomes than normal in this cell, i.e., polyploidy (4).



Photo 1. Nuclear organizers in the nucleus of an X-rayed azalea root tip cell.

### Discussion

Using standard azalea crossing techniques as a means to produce polyploid azaleas does not produce acceptable levels of germination. As determined in the first phase of this project, the germination rates for a polyploid cross is significantly lower than normal diploid x diploid crosses. You can see in the graph of the number of plants that actually germinated, the number of diploid seeds that germinated was 264, but for the same mass of seed (measured on an electronic triple beam balance) only 1 polyploid crossed seed germinated and 10 of the X-rayed seeds germinated. That's a huge difference from 264 diploid crossed seeds (see bar graph, Figure 2).

If we want to induce polyploidy, we have to have some way to measure if we actually produced a polyploid azalea. The best way to measure polyploidy is to count the chromosomes under a microscope. This technique did not work in this case because it was too late in the year to get active root tips. The polyploidy in this case was taken into account by using stomata measurements. This is where the length and the width of stomata on each leaf are measured to

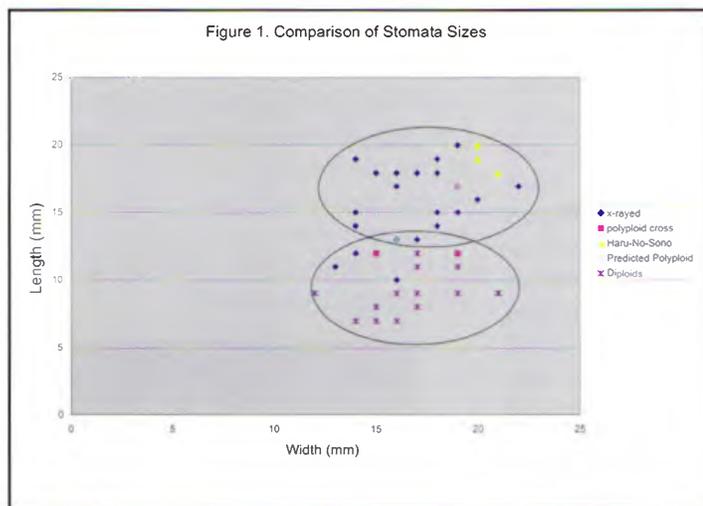


Figure 1. Comparison of Stomata Sizes

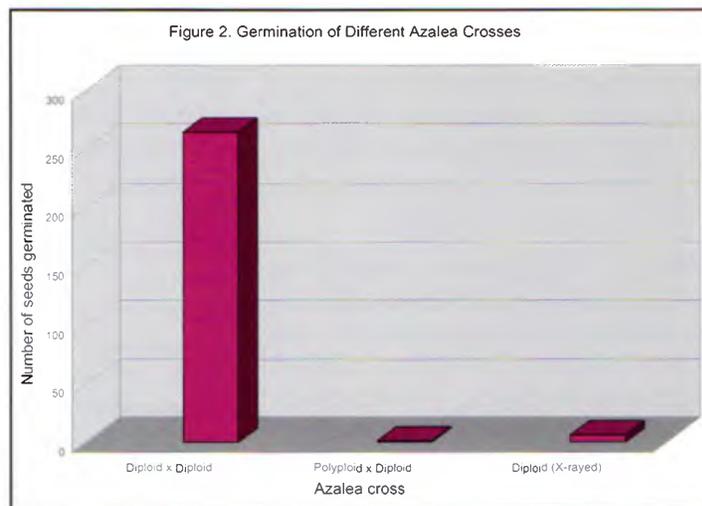


Figure 2. Germination of Different Azalea Crosses

determine the lengths-to-widths ratio that should vary between diploid and polyploid azaleas. Another technique that could have been used was FLOW (Flow spectrometer, particle analyzing system). FLOW is a system that measures the amount of genetic material in a sample and not how many chromosomes; therefore it is not very effective in determining polyploidy (4).

The cross-pollinated polyploid seeds were tested to determine if in fact there were embryos inside the seeds or if the lack of embryos was causing the lack of germination. To accomplish this test, seeds were soaked in Carmen dye for several minutes. If they floated, it was a sign that there might not be an embryo inside. Then, once the dye soaked in to the seeds, they could be looked at under a microscope to see the embryo. It was determined, using this method, that most of the seeds from the polyploid cross did contain embryos. This leads us to believe that the cause of decreased germination was not lack of embryos (4).

This project was not perfect, and there were two main places where error could have occurred. The first was in the measurements that were taken of the stomata. These measurements were done on a very small scale, so it would not have been hard to make an error. That is why three measurements were taken from every leaf. The second possible point of error is that even though the stomata measurements are designed to reveal the polyploidy of the azaleas, it is not the same as actually counting the chromosomes. Therefore, even if the measurements are performed correctly, it is not an absolute measure of polyploidy.

### Conclusion

The main problem is that so far there is no reliable and easily repeatable way to generate polyploid azaleas. Right now there are three ways of producing possible polyploid azaleas: to cross-pollinate, to treat the actual plant with colchicines, or to expose the seeds to radiation (2). The hypothesis is that X-raying azalea seeds is a more

reliable and easier-to-repeat method for producing polyploid seedlings than cross-pollination.

Even though the data seems to suggest that radiation can produce polyploid azaleas, the question this project initially set out to answer definitely remains uncertain. The initial question was, "Is there a reliable and easily repeatable way to generate polyploid azaleas?" The answer given by the stomata measurements concludes that radiation is a reliable way to generate polyploid azaleas. Yet on the other hand, without an actual chromosome count one cannot be certain that the X-rayed seeds were actually polyploid. The germination rate for the X-rayed seeds was still very low compared to that for diploid seeds, and the radiation absorbed by the seeds could cause other problems down the line that have not been observed yet in this stage of growth. This reduced germination rate also impacts the ability of this method to easily generate new and exciting polyploid azaleas.

Future experiments could include actually counting the chromosomes, or testing the other methods, such as the chemical treatments applied when the plant is fully grown.

### Acknowledgments

I would like to thank Dr. Robert Griesbach for his help with the measuring of the chromosome count and looking at the seeds for embryos. I would also like to thank him for his many ideas and suggestions that have improved my project. I would also like to thank Dr. John Klimavicz of Ashburn Farm Animal Hospital for the use of their X-ray machine.

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*Caitlin Klimavicz (shown in Photo 2) is currently a junior at James Madison High School in Vienna, Virginia. She has regularly attended azalea meetings with the Northern Virginia Chapter since 1989. She has won first place two years in a row at her high school science fair, and received a first and second place award in the regional science fair based on this project. Her first science project was "The Effect of Polyploidy on Azalea Seed Germination," which was the preliminary step in working to create better polyploids because the main problem with polyploids was*



Photo 2. Caitlin Klimavicz at work at the microscope.

*their lack of germination in crosses. She hoped that irradiating the seed would not cut down on germination to the extent that the cross-pollinating did, but at the same time create the positive effects of polyploidy.*

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## Society News

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### Highlights of the Michigan Convention Meetings

#### Board of Directors Meetings

The board of directors met in Holland, Michigan, on May 19 and 22, 2005. Reports from the treasurer, azalea city committee, membership committee, the editor, the 2005 convention committee, the archives committee, and from representatives for future conventions, were accepted as presented with no major actions taken by the board. Joe Schild reported that McComb, Mississippi, has been accepted and designated as an "Azalea City." Current and previous articles on the various subjects in *The Azalean* cover the details of the reports. The board established the nominating committee for the 2006 elections. Buddy Lee, John Migas, and Carlton LeMond will serve on the nominating committee.

On other fronts, the board has authorized monies to develop a new color brochure. We have a rough draft of the new presentation that shows real promise. With Carol Segree in the lead, Bill McDavit, Barbara Stump, and Bob Hobbs will be working on a final draft for the board. It is hoped that the changes will help in attracting new members, the lifeblood of the Society.

#### The Society's Annual Meeting

At a previous meeting, the board of directors reviewed and approved an amendment to the by-laws to be submitted to the membership. The members present at the 2005 annual meeting voted to approve the change in wording. The revised Article IX. C now reads as follows:

"All funds of the Society shall be deposited from time to time to the credit of the ASA in such bank, trust company, or other depository or depositories as the Executive Committee may select."

To support the intent of the revised by-laws, the board established an investment committee whose initial duties include the development of investment policies and reporting their recommendations to the board of directors.

In the elections for national office, Mary Rutley, Aaron Cook, and Dr. Joe Coleman were elected to two-year terms as directors. Bob Stelloh was re-elected treasurer and John Brown was re-elected as secretary.

Bill Miller was awarded the Best Article in *The Azalean* Award for 2004 for his article "Ben Morrison and His Azaleas," which appeared in the Fall 2004 issue.

Bob Stelloh was recognized for his many years of service to the Society. Fellow members chipped in on a state-of-the-art computer. However, Bob was riding in the automobile that would have carried his award, and to keep this a surprise, he received only the mouse at the convention. The mouse was mighty enough that Bob was rendered more or less speechless. Congratulations to Bob with appreciation for his service.

Respectfully submitted,  
John Brown, Secretary

# Chapter News

## *Ben Morrison Chapter*

Co-Editors: **Bob Hobbs** —

rwhobbs@mindspring.com

**Carol Flowers** — dflowers@bellatlantic.net

Chapter member **Bill Scott** presented the program for the July 31 meeting, with his report on the Ben Morrison Chapter's five-day trip to Roan Mountain. He thanked **Don Hyatt** for leading the trip. Don asked members to let him know about small azalea nurseries in the area, so he could add their names and contact information to handouts for the 2006 convention attendees. New officers were also elected by acclimation at the meeting:

President—Harold Belcher

Vice-president—Bob Hobbs

Secretary—Carol Flowers

Treasurer—Dale Flowers

The October 29 chapter meeting was held at the Hillwood Museum and Gardens in Washington, DC. The site overlooks Washington's Rock Creek Park, and the gardens feature azaleas, a French parterre garden, a rose garden, a Japanese style garden, and cutting gardens (see more information on this garden in the article on p. 64).

## *Brookside Gardens Chapter*

From convention co-chairs

**William C. Miller III**,

bill@theazaleaworks.com

**Don Hyatt**, Don@donaldhyatt.com

The Brookside Gardens Chapter cordially invites you for "A Capital Adventure" in the suburbs of Washington, DC. The chapter is hosting the joint ARS-ASA convention to be held May 12-15, 2006 with the Potomac Valley, Middle Atlantic, and Mason-Dixon Chapters of the American Rhododendron Society. Headquartered in nearby Rockville, Maryland, the convention will begin on Friday evening and close on

Monday morning, to help reduce costs for participants and to avoid the weekday rush hour traffic. The convention features world class speakers, a great plant sale with many new azalea introductions, exciting tours to private and public gardens in the region, and an overnight trip into the Blue Mountains of Virginia after the convention. A flower show is also on the program. Full details can be found on the convention Web site [www.arspvc.org/2006](http://www.arspvc.org/2006), which can also be visited through the ASA Web site "conventions" link. Registration materials will arrive in the Winter 2005 issue of *The Azalean* and will also be posted on the ASA Web site in January 2006.

## *Northern Virginia Chapter*

**Frances Louer**, Corresponding

Secretary, plouer@msn.com

The annual plant auction was held at the home of **Bill and Val Lorenz** on August 28th. There are many advantages of a plant auction: you get to take home a plant already started as opposed to cuttings that have to be rooted; you are exposed to new azalea varieties; and you can learn more about azaleas and how they are grown, even if you are just getting started. Chapter members were encouraged to invite friends and members from other chapters.

The September 25th meeting gave the chapter their first opportunity to try out a digital projector, thanks to a search of possible sources by **Phil Louer and Don Hyatt**. With this technological aid, **Caitlin Klimavicz** was able to show her digital images for her program, "Developing New Evergreen Azalea Hybrids." Caitlin has assisted her father Joe Klimavicz in hybridizing new evergreen azaleas since the 1980s; together they've produced 500-1000 new hybrids each year. Two new hybrids were registered just this past summer. [See also her article on p. 58 which describes

*other research and some possibilities for future azalea hybridization, Ed.]*

## *Oconee Chapter*

**Frank Bryan**, Newsletter Editor

Rudie2rudie@aol.com

At the September 18th chapter meeting, and the program consisted of **Dr. Joe Coleman's** and **Dr. Frank Bryan's** slides and discussion of the gardens in Holland, Michigan, that they saw during the ASA convention in May. Then, for comparison, Frank showed slides of The Netherlands to show some gardens in the real Holland. The September 2005 issue of the chapter newsletter contained a detailed article on "Azalea Root Fungi" and description and discussion of three more deciduous azalea groups: The Confederate Series hybridized by the Dodd and Dodd Native Nursery in Semmes, Alabama; Towe-Anastos deciduous azaleas hybridized from species found in the wild by Clarence Towe; and the "Maid in the Shade" hybrids developed by George, Mary, Jeff, and Lisa Beasley of Transplant Nursery in Livonia, Georgia. Newsletter editor **Frank Bryan** researches and writes much of this newsletter and requested articles from other azalea enthusiasts in the Oconee Chapter and the ASA. Contact Frank at the above e-mail or by phone at 770-760-1569.

## **WANTED**

### **Azalea Festival Information**

Send any news about local azalea-oriented festivals, celebrations, special "garden-open days", azalea trails, or conferences to the Editor, [bsstump@sbcglobal.net](mailto:bsstump@sbcglobal.net) or by fax to 936-462-1842. They will be featured in a highlighted list in the Spring 2006 issue. Be sure to include your contact information (e-mail and/or phone numbers).

# *The Schroeder Azalea Hybrids: A Brief History and Update*

Stephen L. Schroeder and David R. Schroeder — Evansville, Indiana

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During the spring of 1973, the late Dr. H. Roland Schroeder, Jr., set out to develop a series of hardy hybrid evergreen azaleas. The main purpose was to develop a hybrid that would withstand our climatic conditions here in southern Indiana, and still display a variant array of colorful blooms. In order to accomplish this, it would take several thousand azalea seedlings from various crosses, as each plant would differ, even with the same parent crossings. After careful evaluation, 37 evergreen azaleas were selected, potted up and later set out to test their hardiness. In the spring of 1984, the azaleas produced blooms for the first time, and all 37 were named and registered in the following year.

## **Plant Production and Propagation**

Propagation and growing of our hybrid azaleas began in the spring of 1986. At first, due to the lack of sufficient numbers of any named azalea, we sold very few and these were sold to collectors and members of the ASA. As time went on, we were able to produce enough of our hybrid evergreen azaleas to sell locally and by mail order. Up until 1990, we sold many of our azaleas through mail orders, but decided that we really needed to concentrate on local sales to other nurseries and to the local public interested in our hybrids. So, in March of 1990 we discontinued our mail order service to better serve our area, for which the azaleas were developed.

For a number of years we grew most of the selected 37 azaleas; but later, when we knew which were more popular locally, we settled on four of our most popular azaleas including: 'Mrs. Henry Schroeder' (syn. 'Mrs. H.R. Schroeder'), 'Schroeder's White Glory', 'Scarlet Frost', and 'Purple Pride'. These were available in two sizes: the larger 18" to 24" plant and a smaller-sized one of around 12" to 15". Another thing we discovered is that azaleas, regardless of variety, are best grown in shallow but wide flats rather than in conventional nursery pots of gallon size. We also discovered that azaleas grew better in pine bark mulch rather than in peat moss, as the bark mulch allowed better drainage. This growing method worked very well for us, and we were able to salvage the metal flat by selling each azalea in burlap or in a plastic bag. Our customers also appreciated the fact they were able to plant their azaleas sooner and would not have to throw away a good nursery pot.

As time passed, from the years of 1990 to 1999, we started noticing that sales of our azaleas to wholesalers were dropping significantly. Our regular retail sales showed some drop, but not as much as the wholesale section of

business. Around 1997 we once again thought about reviving our mail-order service; but due to cost of shipping and slow sales we once again dropped the mail-order service idea. Also, at this time, the larger chain outlets were starting to sell azaleas and other plant material at a much lower cost than we could have charged and still make a profit and meet operating expenses.

## **Unexpected Problems**

Then we started noticing that our retail customers were becoming fewer and fewer each year. In order to better serve those still interested in our evergreen azalea hybrids, we started growing the 12" to 15" sized azaleas in the most popular colors. However, in 2002 our water department, to better serve its water customers and to maintain a clean and healthy water supply, switched from just adding chlorine to the water supply to adding chloramines, a more stable compound. At first we did not think this newly added compound would affect our propagation and growing, but we soon found out that it prevented the azalea cuttings from producing roots, and the chloramines also tied up fertilizers and other chemicals we used to grow our azaleas. We did find that we could propagate our azaleas using rainwater, but the area that we could use was really too small to produce enough plants to carry on business. After extensive research into a solution to our problem, we came to the decision that it would not be feasible to continue. After some 30 years in the nursery business and developing our own hybrid evergreen azaleas, we decided to discontinue our nursery business and retire. We continue to receive many calls concerning ours and others' plants, and we always provide any help and assistance we can.

## **Other Sources For Our Azalea Hybrids**

As for the Schroeder azalea hybrids, there are several other nurseries that are currently growing and selling them. Many have contacted us stating that they have done very well with our azaleas, and just like our experience, there are those particular colors that are the most sought after. We believe that currently the Schroeder azalea hybrids are being grown in gardens and arboretums in all 50 states. We are still very proud of our father's work with evergreen azaleas and other plants, and seeing them listed in catalogs is very rewarding. Also knowing that our nursery in Indiana was the only one to date to develop and propagate their own azalea hybrids was equally rewarding.

*Stephen Schroeder and his brother David Schroeder both graduated from Murray State University in 1974. Stephen received his BS degree in Agriculture specializing in*

*Horticulture. David received his BS degree in Biology. They were co-owners of Holly Hills Nursery, located in Evansville, Indiana, started by their late father Dr. H.R. Schroeder, Jr., MD.*



This photo shows the open shrub habit of 'Doctor Henry Schroeder', taken in the private garden of the late Fred Sievers.  
(Photo by Greg Wedding)



Not only are Schroeder hybrids cold-tolerant, but they also display a variety of flower forms. Shown here are three very attractive variations: Photo 1. 'Mrs. Mildred Kinder', a double lavender with pointed petals; Photo 2. 'Margaret Hyatt', a lovely pink double with frilly edges; and Photo 3. 'Schroeder's Pink Perfection', a double with rose strap-like petals. (All photos by Jackie Cottom)



# Azalea Gardens Hillwood Museum and Gardens

Kelly Wilson — McLean, Virginia

Each May, the soft pastels, friendly corals, and vivid reds of layers of azaleas remind us why they are one of the biggest attractions at Hillwood Museum and Gardens. To large numbers of Hillwood's visitors, May is the best and most favored time to see the thousands of colorful azaleas and take in the rest of the gardens.

This past spring was no exception. An early warm spell followed by cooler-than-average temperatures gave way to four weeks of spectacular blooms. Korean rhododendrons kicked off the season, followed by Glenn Dale, Kurume, Girard, and Satsuki hybrids. Towering old elm trees, flowering dogwoods, and illustrious camellias created a perfect backdrop for the mature 1950s and 1960s azalea cultivars.

Brian Barr, Hillwood's deputy director for horticulture, describes the estate's azaleas as "tried and true." Many of the azaleas are "still in the nursery trade, with probably a few that have been lost." He notes that 'Koromo-shikibu,' one of many azaleas repeated in Hillwood's 14 acres of cultivated landscape, recently took Best in Show at the local Brookside Gardens Chapter of the Azalea Society.

Hillwood, the former home of Post cereal heiress Marjorie Merriweather Post, was purchased with the philanthropist's intent to showcase her French and Russian decorative and fine arts collections. Located adjacent to Rock Creek Park in northwest Washington, DC, Hillwood houses the largest collection of Russian decorative arts outside of Russia. Imperial Russian portraits, including of Catherine the Great and Nicholas II, flank the grand staircase of the estate's 36-room mansion. French furnishings and tapestries dominate the French Drawing Room, and Fabergé Easter eggs occupy center stage in the Icon Room.

While appreciating 18th century French furniture, Mrs. Post also delighted in her landscape and was especially fond of the azaleas. She took such pride in the azaleas that she scheduled her spring garden parties around their peak bloom period, which usually falls around Mother's Day. Earl Loy, a full-time gardener for Mrs. Post, explained in an interview that she would call from her Palm Beach estate in December to inquire about the peak date so she could plan her parties accordingly.

Following Mrs. Post's death in 1973, the gardens experienced a slow decline. Long-time Hillwood horticulture staff member Bill Johnson recalls how huge and overgrown the azaleas became: "Lack of sunlight created a terrible case of



Glenn Dale and Kurume hybrids at their peak in the Hillwood Gardens. Every year Mrs. Post would hold an annual garden party centered around the azaleas' bloom date, usually the beginning of May. (Photo courtesy of Hillwood Museum and Gardens)

## Margie Jenkins Honored with SNA Award

Robert (Buddy) Lee —  
Independence, Louisiana

Congratulations to our own Margie Jenkins, of Amite, Louisiana, for receiving the Slayer Wight Memorial Award from the Southern Nurserymen Association (SNA) on August 12, 2005, in Atlanta, Georgia. This award dates back to 1956, and is presented annually to the person who has contributed most to the advancement of the nursery industry in the South. In the award's 50-year history, Margie Jenkins is the first lady to ever receive the award.

Margie has served on the national board of directors for the ASA and presently holds the position of treasurer of the Louisiana Chapter. She is very knowledgeable in the nursery industry and is considered an expert on evergreen azaleas. Again, congratulations, Margie. (Photo by Buddy Lee)



petal blight, and you couldn't even see over the azaleas they were so tall." All that changed in 1993 with a renewed emphasis on the gardens and the hiring of the first director of horticulture. The first major project? Thinning out the azaleas. In 1997 the museum closed for renovations, and a major restoration began of the gardens. The thinning of the azaleas continued to be evaluated and resulted in additional "weeding out." Horticulture staff reviewed photographs, home movies, and oral histories to determine cultivars appropriate to the time during which Mrs. Post resided at Hillwood.

In today's care of these stately gems of the garden, pine-bark fines have replaced shredded mulch, which had only served to raise the pH of the soil and turn the azaleas chlorotic. This past spring, the staff filled gaps in the garden with additional rhododendrons, azaleas, and dogwoods. With the move into summer, *Pulmonaria* and ostrich ferns found their way into little niches in the garden.

Visitors who want to experience the peak azalea bloom are advised to plan well in advance. Reservations are now being accepted for May 2006. Hillwood is open Tuesday through Saturday, 10:00 am to 5:00 pm and select Sundays throughout the year. It is closed the month of January and on most Federal holidays. Admission is \$12 for adults, \$10 for seniors, \$7 for students, and \$5 for children ages 6 to 18. Reservations are required and can be made by calling 1-877-HILLWOOD or visiting [www.hillwoodmuseum.org](http://www.hillwoodmuseum.org).

*Kelly Wilson has been the cutting-garden manager at Hillwood for five years. She has a horticulture degree from Virginia Tech. She is learning to like azaleas because of her work at Hillwood. She is a budding photographer and writer.*

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# Keeping Track of Your Plants

Bob Stelloh — Hendersonville, North Carolina

## gim

Once upon a time I had developed a Macintosh program to keep track of our plants. It was so useful I decided to try to market it. During a collaboration with the Lewis Ginter Botanical Garden in Richmond, Virginia, over the course of many months, I added the features and capabilities needed by public gardens. These were primarily related to security, multiple users at different job levels, multiple plants acquired at one time, data entry audit (who edited what data when), and exchanging data with other public gardens in an industry-standard format. I then marketed it as “gim, the garden inventory management program for the Macintosh”. Eventually I removed many of the features not needed by a private user, and sold it as “gim jr” to a few serious home gardeners.

gim has two major components that work together: a plant database and a garden map. The database includes a comprehensive set of data elements, reports and preference settings to cater to the needs of a wide variety of users. The database program allows the user to maintain a set of defined entries for each data element and use only those defined entries for data entry, to enforce the consistency needed for successful computer use. The garden map program creates a base map (see Figure 1) with user-assigned dimensions and scale, and provides tools for drawing the garden map on that base map. It then puts a

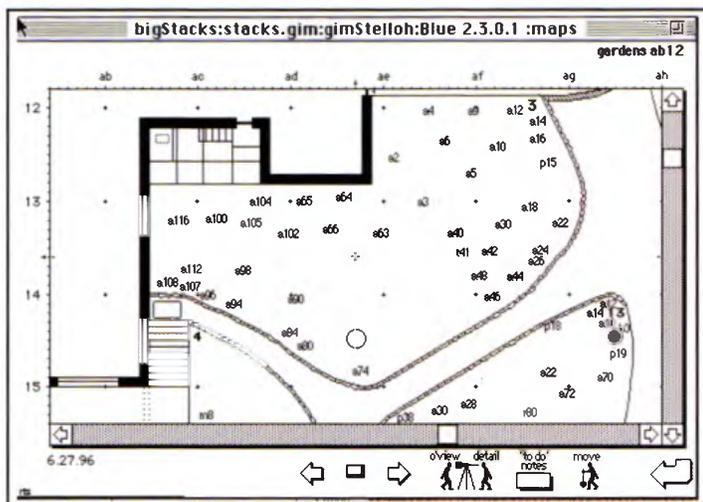


Figure 1. Example Garden Map, in this case from the former Stelloh garden in Darnestown, Maryland. (gim screen shot by Bob Stelloh)

label for each plant on the map based on their user-assigned x,y coordinates (or based on the user dragging the plant label to the right spot on the map). It includes two-way links between the map and the database for each plant, such that a change in the database changes the data on the map, and vice versa-absolutely necessary to keep the data consistent.

## Using a Spreadsheet

Instead of becoming a programmer and doing all that, you can use a spreadsheet to keep the data for your plants if you are willing to forgo the mapping and the enforcement of data entry standards. The basic idea is to use one column for each data element you will have, and use one row for each plant. It is easy to do even if you have not used a spreadsheet before, since there are no formulas to contend with; you are only using the spreadsheet for its ability to organize, sort, print, and maybe export your text.

The first step is to decide what data you would like to keep for your plants. Start by thinking about the lists you would like to have, such as lists sorted by name, hybrid group, bed, color, age, source, etc. Then think about what you want to know about each plant. Taken together, those decisions determine the data elements you will need. Next, think about the conventions and possible entries you will use for each of the data elements. This is a crucial step because these conventions let you search for a plant based on the data you have entered for it, and increase the usefulness of sorts by those data elements. For some ideas, look at the data entry mockup for an azalea database, at <http://www.azaleas.org/azenter.html>, which shows many data elements and their standard entries.

Some other ideas to consider for the data elements are:

- A unique identifier, useful when you have more than one plant with the same name: A standard approach used by many public gardens is the last two digits of the year in which you got the plant, followed by a unique three- or four-digit sequence number within each year. It can be useful to separate those two numbers with a single letter for the type of plant, such as a=azalea, c=conifer, d=deciduous azalea, g=grass, m=maple, p=perennial, r=rhododendron, t=tree, v=vine, w=wildflower. That yields an identifier such as “95a023”, which identifies the 23rd plant you acquired in 1995, which is an azalea.
- Name, either with separate columns for genus and species and cultivar, e.g., [Rhododendron | austrinum | ‘Don’s Variegated’], or one column for the combined genus and species and cultivar, maybe with the genus abbreviated to a single letter, e.g., [R. ‘Amy’] (having one column is easier to deal with, but your approach will depend on how you want to sort your plant data)
- Common name and/or hybrid group, e.g., “Dodd evergreen”
- Source (where you got the plant, e.g., “ASA 04 convention”)
- Cost (how much you paid for the plant)
- Type (what you acquired, such as “cutting” or “seed” or “1 gallon”)

- Date (when you acquired the plant, maybe in yymmdd format so you can sort by it, e.g., 050423 for the 23rd of April, 2005)
- Bloom time: either the time of first bloom or time of peak bloom (pick one and stick with it), coded as, e.g., 5M (5=May + E/M /L for early/mid/late) or, e.g., 1Apr (1=week 1/2/3/4 + 3 letters of the month), or the actual date, maybe in yymmdd format so you can sort by it
- Garden color (what the flower looks like, from, say, 10 feet away)
- Bloom color (what the flower looks like from 1 foot away)
  - Base color
  - Blotch color
  - Variation(s) shape, color, amount
- Bloom size (width across the face of the bloom, or slant length of the bloom from tip (distal end) of the pedicel to edge of the petals, or both)
- Bloom shape, such as “double hose-in-hose”
- Leaf color
- Leaf size
- Plant habit, such as open or dense, upright, or mounded
- Plant size (ideally, the size history): using a plant number with the year you got it gives you a rough idea of how fast the plant has grown between when you got it and now; an approach for keeping this in greater detail is to show the year and the height x width, with the most recent year first, e.g., 2005-5x2.5, 2004-4x2, 2001-1x0.25
- Plant location in the garden (see below)
- Growing conditions (either the actual conditions you have given the plant, or the conditions desired by the plant, or both), such as
  - Soil type
  - Amount of sun
  - Amount of water
  - USDA cold zone
- Notes: free form text , e.g., “chlorotic”, “move this fall”, “may be ‘Cinderella’ instead”, “0-46-0 spring 2004”

You will find that some data elements seem like a good idea, but aren't very useful in practice, and simply aren't worth the effort to enter. That's fine-either just don't enter that data or delete its column. You will also find some other data element you didn't think would be useful is very desirable and worth your effort to enter. That's fine too-just add a new column for it.

It is easy, but tedious, to enter all the data for all your plants. Once that's done, you can sort by any of the columns to show, for example:

- All your plants sorted by name (sort by name)
- All the plants in each of the beds (sort by bed and by name)
- All the plants that bloom in May (sort by bloom time and by name)

- All the plants with red blooms (sort by garden color and by name)
- All the plants of a given type (sort by type and by name)

You can then print all or parts of your spreadsheet to take into the garden with you for note taking and updating. An approach that has worked well for me is to print a report of the plants in each bed, one or two pages per bed.

### Garden Maps

It is a lot of work to draw an accurate map of your garden, and to accurately locate your plants on that map. On the other hand, some sort of mapping is the only way to completely solve the “lost label” problem, and having x,y coordinates with the name is a good way to find a plant. An easier alternative to mapping is locating your plants by their distance from a known point. Here's the way I'm doing it in our garden:

- I name the beds (as defined by paths or natural barriers), using an up-to-4-character abbreviation, e.g., “agln” for “above the glen”-short is good, for space considerations on reports and on a personal digital assistant (PDA) as described below, and I like acronyms.
- Next, I put a stake in each bed at some convenient point next to the path and lay a 100' tape along the path around the bed, going clockwise from the stake.
- Then I note the location of a plant as its distance clockwise around the bed from the stake to that spot on the path at a right angle to the plant, and, using a separate tape, its distance from the path into the bed to the plant. That yields a location such as “agln 16.7”, which locates a plant in bed “agln” that is 16' clockwise along the path from the “agln” stake and then 7' into the bed.
- After documenting the plant measurements, you can instead measure the offsets from a nearby previously measured plant to get the distances for a new plant. For example, a plant that is 3' further from the stake and 5' further from the path than “agln 16.7” would be “agln 19.12”.

I had a special case, which was a long and narrow nursery bed. To make it easier to locate all the tightly packed little plants using the “clockwise and in” convention, first I put in a grid of stakes every 4'. The corner stake was labeled “0.0” The other stakes are labeled “0.4”, “0.8” and etc. along one edge, and “4.0”, “8.0” . . . “32.0” along the other edge, with interior stakes labeled appropriately, such as “4.4”, “8.20” and etc. Then it was easy to measure the plants by their offsets from the nearest stake, and it's easy to find them again the same way.

Fake beds can be useful too. I use “dead”, “find” (I know I have it but I don't know where), “tbp” (“to be planted” plants in pots), “repl” (“replace” = it died, and I want another one), “gift” (given to someone), and “prop” (being propagated).

### Garden in Your Pocket

Another approach I have tried, and like, is to export a few

selected columns of the data into a hand-held PDA, to keep all the garden data in my pocket in a very useful form. The data I keep on my Sony Clie PEG-SJ20 PDA are:

- Bed name
- Plant name
- Plant number
- Bed location
- Bloom time
- Color
- Plant size
- Notes

I upload this from my computer and import it as standard (i.e., no programming required) "memos" on the Sony PDA, which is about the same as "notes" on a Palm PDA. I separate the data elements with commas to help with the upload/download. That is one of the standard ways to export data from a spreadsheet—it's called CSV format, for "comma separated values." After importing the data to the PDA, it appears as a scrollable list of all the plants, sorted by bed name and by plant name within each bed. There isn't much display space, so each entry in the list only shows the bed name, usually most or all of the plant name, and none, part or all of the number depending on how long the plant name is. Tapping an entry then shows all the information for that plant and lets you edit it. The PDA built-in "find" function searches on any text in any field and lists all the matches very quickly.

Having the name and location data lets me find any plant in the garden without relying on my memory: I just search on the name or number and tap on the appropriate result to see all the information for that plant, including its bed name and location (see Figure 2). Knowing that if I take big steps I have a 3' stride, and knowing where the bed stakes are, makes short work of finding that plant. That same search by name augments my memory at a plant sale and avoids my buying duplicate plants by mistake.

Having the plant location lets me make a new label for a plant with a missing label. I use Oats AlumaBoss labels, which are soft aluminum you emboss by writing on it with a pencil or ballpoint pen. I put the



Figure 2 (above). Example "garden in your pocket"—a list of plants, in this case, in the "above the glen" bed. (Photo by Bob Stelloh)

I put the name on one side, and the number on the other side, with space left over for bloom color, bloom time, etc. I buy the labels without wires, and instead use 9" lengths of scrap insulated telephone wire, the finer the wire the better. A nice touch I was taught by Malcolm Clark is to always put the label on the north side. North isn't important, but having one standard location (rather than the most convenient—and different—location for each plant) is very important in reducing the time spent finding a label. I put a loose wire loop around two branches at a three- or four-branch fork near the end of a stem about waist high, and gently crimp the loop closed to help keep it where I put it. I think using fine wire will let it open

Figure 3 (below). Full details for the 'Macrantha Purple' entry shown in Figure 2. (Photo by Bob Stelloh)



up as the branches grow to avoid any girdling. Another idea I've learned but have not done, is to make a duplicate label with a much longer wire, put the wire on the ground around the plant, mulch over it, and forget about it. When the visible label on the plant is gone, you can feel around in the mulch to find the wire and thus the label, and duplicate its information onto another visible label.

Having the location, bloom time, color, and size data lets me enter or change that data in the PDA when I'm in the garden looking at the plant, and then download it to the computer later. It might be easier to jot down some notes on a piece of paper, and use those notes to update your spreadsheet. Just remember—keeping track of your plants isn't nearly as important as caring for their needs.

*Bob Stelloh, our treasurer, is an avid azalea enthusiast and former software engineer. He is currently very involved with the azaleas e-mail list and the ASA Web site, and with finding and documenting native stands of Rhododendron vaseyi. He is also thinking about rewriting gim jr to run on a PC as well as a Macintosh, using the fine new PC awarded to him at the 2005 ASA convention as the test bed.*

## New Members

The following new members have joined the Society as of October 14, 2005

### At-Large

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### Tri-State Chapter

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