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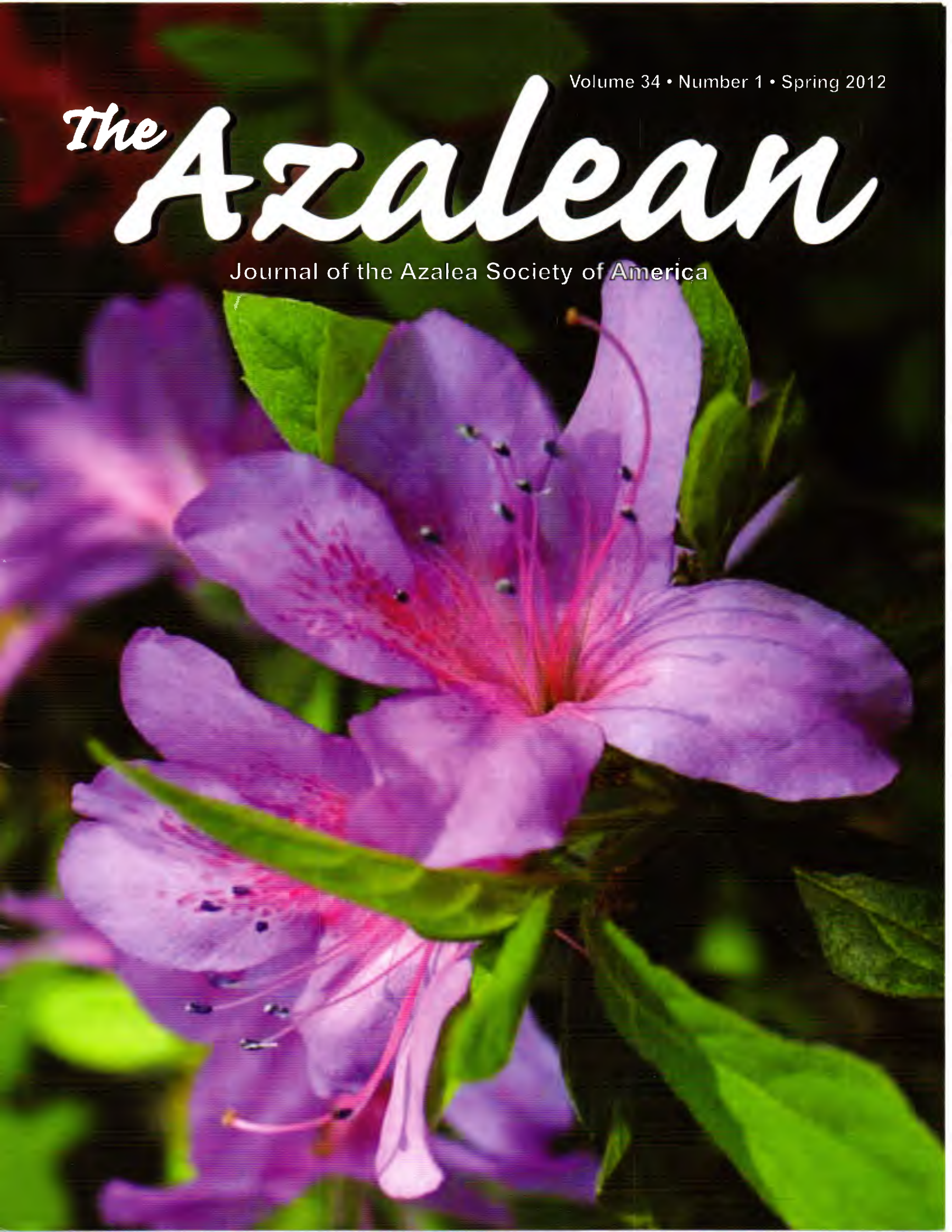
The Azalean

Journal of the Azalea Society of America



President's Letter

John Migas — Saugatuck, Michigan

Here it is the morning after a beautiful Memorial Day weekend. I have been fighting a summer cold putting me totally out of commission for the past week. It's been hot, sunny, and windy, just what our azaleas and rhododendrons don't need this early in the season. All that I've been doing is watering, watering, and more watering. Would you believe this, last year I never turned on my lawn sprinkler system. All season, never used it. This year, it's been on for the past month which is way too early for Michigan.

I want to start out by thanking all who participated in the joint convention in Asheville. For those of you who missed it, for whatever reason you convinced yourselves for not attending, you really blew it. The weather was perfect, the gardens were beautiful, we had plenty of blooms to see, the speakers were outstanding, and the plant sale was second to none. If anyone wanted to add new plants to their gardens, this was the plant sale to attend. If all you did was attend the sale, your trip was complete.

Conventions happen once a year, and in the past it seems that Mother Nature has not been in our corner. This year, blooms arrived at least 4 weeks early and the hopes of flowers hanging on seemed almost doomed. Not so, many of the rhododendrons were at their peak and the *R.vaseyi* azaleas were awesome on the Blue Ridge Parkway. The convention is an event that we all anticipate all year just so we can meet up with others who we haven't seen during the season.

This first year as president was very busy. We completed the Harding Memorial Garden at the end of 2011. We had one of our founding chapters, Brookside Gardens close their doors after more than 30 years of leadership. There has been talk that the group can reclaim the chapter if any members want to step forward. We had the Alabamense Chapter start a new, which has been inactive since 2005. We have new Editors, Bonnie and Preston Cooley who will be taking on the role, with some assistance from Barbara Stump. Our membership chair, Eve Harrison is on a mission to get things organized. To all chapter presidents, please appoint someone to work with Eve on this project. All chapters should have a representative helping out with membership. Let's jump on board.

Our conventions are planned for the next three years, Athens, GA for 2013, Charleston, SC. for 2014, and Nacogdoches, TX for 2015. I look forward to all of these locations. Good luck to all the volunteers. With the thought of our future conventions being posted, how would the Society feel about having a fall meeting somewhere. Don't have to worry about blooms, and the weather wouldn't have to be the best either. Just a thought?????

Now that the summer season has actually kicked in most parts of the country a bit earlier, I hope you all have a fun year of weeding and watering, and pruning.

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 which are in the subgenera *Tsutsusi* and *Pentanthera* of the genus *Rhododendron* in the Heath family *(Ericaceae)*.

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Photo Will Ferrel

On the Cover

Southern Indian 'Prince of Wales' at Magnolia Plantation and Gardens in Charleston, South Carolina. Please see related article on page 14.

Hybridizing Concerns:
Color Inheritance, Polyploidy, and Sterility

Don Hyatt—McLean, Virginia

In any discussion of hybridizing, it is important to consider the science behind important aspects like flower color inheritance, polyploidy, and potential sterility of one or more of the parents. Attaining a hybridizer's goal is not always easy, but by understanding some of the genetics involved, one can make informed decisions as to which crosses might lead to success.

I am not sure when I made my first evergreen azalea cross, but I know I was hybridizing azaleas in the early 1960s when I was in high school. My first crosses were undoubtedly as informed as those made by bumblebees. If I admired one azalea flower I might take the pollen from it to put on another flower that caught my eye. After earning my degree in horticulture, I tried to be more scientific in my hybridizing since I had specific goals in mind. I am not sure it made a great deal of difference, though, but it did help me to understand what was happening.

Photo Donald Hyatt

▲ *R. nakaharae* x *R. kiusianum*

Color Inheritance

It was 30 years ago when I crossed the orange-red species, *Rhododendron nakaharae,* with a dwarf white form of *R. kiusianum*. Expecting compact hybrids in shades of coral, pink, or white, I was shocked as each seedling bloomed and every one was purple! Neither parent had purple flowers, so why did I get purple seedlings? Obviously, azalea flower color inheritance was more complicated than I had imagined.

The dominance of purple color in azalea hybridizing has been well documented and that trait has been very frustrating for many breeders who were seeking different azalea flower colors. One of Joe Gable's goals was to develop a hardy white azalea but it took 17 years to reach his goal, the superb creamy white he named 'Rose Greeley'. [7] I was so pleased that it took "Best-in-Show" at the 2009 ASA Convention here in Northern Virginia, not for the fact that my plant won the award, but it brought attention to a wonderful azalea that people tended to overlook.

When I shared the confusing results of my *nakaharae x kiusianum* hybrids with one of my mentors, the late Dr. August Kehr, he provided me with an article that described the action of the genes controlling flower color inheritance in evergreen azaleas. The original research paper by J. Heursel and W. Horn was written in German and published in 1977. Fortunately, Augie provided me a translation in English.

The strong purple, orange, and red colors we see in evergreen azaleas are primarily due to the presence of pigments called anthocyanins. There are many variations of the anthocyanin molecule, but it is basically the same pigment that makes strawberries and roses red, blueberries and blackberries deep purple, and delphinium flowers blue. The many different forms of anthocyanin are the result of other chemical groups attached at different locations on the basic molecule. Each form can be a slightly different color and that shade can further be modified by other factors including the acidity of the cell sap or presence of other pigments.

Heursel and Horn analyzed seedlings from thousands of crosses, and eventually established the existence of six gene pairs controlling flower color. [3] They identified four different forms of the basic anthocyanin molecule in evergreen azalea flowers, and those were controlled primarily by three of the genes. Depending upon which genes were active, an azalea could produce cyanidin which gives a blossom the color "geranium lake," the familiar coral shade in evergreen azaleas like 'Fashion' or *R. nakaharae*. The anthocyanin molecule could also be of the form delphinidin, which has a blue to purple shade, but it could instead be the

form peonidin, a carmine red shade. The fourth form the anthocyanin could take in azaleas is malvidin and its color is purple. A white azalea is one where there is no pigment produced.

The researchers identified the gene **W** (or **w**) as the one that produces the basic anthocyanin pigment in evergreen azaleas. The capital **W** means the trait is dominant and that form is the one that produces pigment. The lowercase **w** is called the recessive form of the trait, and in this case it keeps the plant from making any pigment. Since plants get one gene from each parent, there are several possibilities. They can have two genes of the dominant form **W**. Such plants are called homozygous (**WW**) and would produce anthocyanin pigment. They could have a gene of each type and that is called heterozygous (**Ww** or **wW**). Since they contain the dominant form of the trait **W** they would still produce pigment. The recessive gene **w** means that a plant must have both genes of that type for its action to be observed. Therefore, a plant must be homozygous (**ww**) with two genes for the recessive trait before it exhibits that factor, and in this case it produces no pigment and thus has white flowers. Figure #1 is a Ponnet Square that summarizes the possible combinations of the genes producing anthocyanin pigment in azaleas.

Figure #1

Possible Gene Combinations

	W	w
W	W W	W w
w	w W	w w

Pigmented: WW, Ww, wW
Not Pigmented (white): ww

Two other genes Heursel and Horn discovered interact with the production of the anthocyanin pigment and thereby change the form that is made and consequently the color of the flowers. With no interaction, the pigment is simple cyanidin which is the coral shade discussed before. However, the presence of the gene **O** (or **o**) controls oxidation of the anthocyanin and that can add an oxygen atom to the molecule and that produces a different form called delphinidin. The gene **P** (or **p**) controls the addition of a methyl group to the molecule and that will produce peonidin. When both **O** and **P** are present, the molecule gets both oxygen and methyl groups and that results in malvidin. These results are summarized in figure #2.

Genotype	Anthocyanin Pigment	Color
WWOOPP or **WwOoPp**	malvidin	purple
WWOOpp or **WwOopp**	delphinidin	blue
WWooPP or **WwooPp**	peonidin	carmine
WWoopp or **Wwoopp**	cyanidin	geranium lake

Figure #2

A secondary pigment called flavenol is also present in some azalea flowers and that can add a light yellowish cast to blossoms. However, flavenols also seem to interact with anthocyanin making purple colors appear more intense. Knowing how these genes interact is helpful for hybridizers. I will summarize some of their findings concerning the other three genes but they are of less importance for flower color inheritance than the first three genes already discussed.

The researchers identified two genes involved in the production of the water-soluble flavenols. These pigments give that ivory or greenish yellow cast to certain azalea flowers like 'Puck' or 'Olga Niblett'. Gene **Q** (or **q**) controls flavenol production, but there was a secondary gene **M** (or **m**) that controls methylation of the flavenol. The researchers noted that high concentrations of flavenols seemed to intensify the purple color of anthocyanin pigments like malvidin.

The intense purple colors in azaleas like 'Dauntless' and 'Girard's Fuchsia' are probably due to the presence of flavenols with anthocyanin pigments. For instance, Joe Klimavicz crossed the tender bicolor 'Leopold-Astrid' with 'Girard's Fuchsia.' Instead of the hardy bicolor he was expecting, Joe found many buff-colored seedlings including the one he registered as 'Sandy Dandy'. If the brilliant purple of 'Girard's Fuchsia' is caused by flavenols intensifying the anthocyanin, when the purple pigment was not expressed in certain seedlings such as 'Sandy Dandy', the yellowish flavenols were still abundant and their presence gave the hybrid its unusual color.

No matter how concentrated they become, flavenols by themselves are not strong enough to produce the deep yellow hues we admire in other flowers like daylilies, daffodils, and dandelions. Those colors are produced by pigments called carotenoids, and they are the same ones responsible for the deep yellow and orange colors found in deciduous azaleas like *R. calendulaceum* and *R. austrinum*. Carotenoids are not water soluble, but are contained in specialized protoplasmic bodies (plastids) and are not dissolved in the sap. Carotenoids are not naturally present in evergreen azaleas so getting a deep yellow evergreen azalea will require some other techniques to get them into the plant.

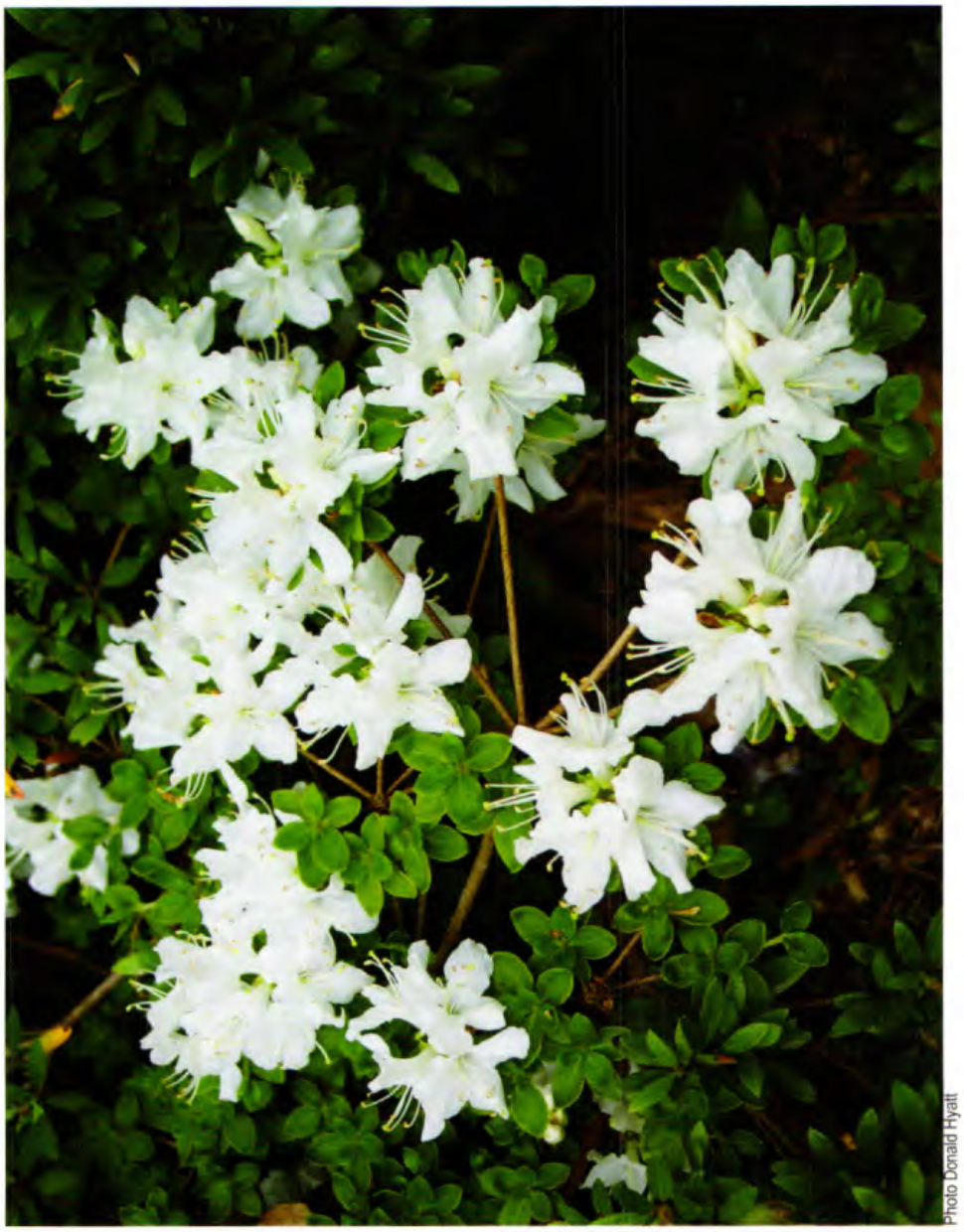
The sixth gene pair, **G** (or **g**), controls a process called the glycosidation of anthocyanin but apparently it does not influence flower color so I mention it only in passing.

These details from this research helped explain why my cross of *R. nakaharae* with the white *R. kiusianum* produced nothing but purple flowered seedlings in that initial cross, the "F1 generation." The white *R. kiusianum* probably had the genotype **wwOOPP**. It had

two genes for the recessive trait (**ww**) and that meant that it could not produce any pigment. Hence, the flowers were white. Had either of those genes been a **W**, the plant would have produced pigment. Because the *kiusianum* also had the dominant genes **O** and **P**, had the azalea been able to produce pigment, the color would have been purple. It should be noted that the most typical forms of *kiusianum* are purple.

The orange-red *R. nakaharae* probably had the genotype **WWoopp**. Without the presence of either the dominant **O** or **P** genes, the color was not purple but the light orange-red, cyanidin. When crossed with the white *kiusianum*, though, the seedlings would get genes from both parents. They picked up the **W** from *nakaharae* that allowed the seedlings to produce pigment but they also picked up the genes **O** and **P** from *kiusianum* and that caused the pigment form to be malvidin. All seedlings had the likely genotype **WwOoPp** and that produces purple pigment.

Had I been more vigilant in my hybridizing efforts, I should have crossed some of those purple seedlings (the F1 generation) to produce a second generation, or an F2 cross. John Weagle of Nova Scotia made that same initial cross I made and saw all purple seedlings in that first generation. He did cross some of his F1 seedlings and that reshuffled the genes so he got all kinds of different combinations and ended up with a broad range of colors. [9]



▲ *R. kiusianum album*

Sterility

Another problem that azalea hybridizers often face is that some plants they would like to use in breeding can be sterile. There are several reasons for the problem, but it can be very frustrating when trying to breed for specific goals and one or more of the parents are infertile.

Some azaleas are sterile because flowers lack essential reproductive parts. They may be lacking anthers or pistils, or both. This is a common problem with flowers that are fully double. Double azaleas flowers like those found on 'Balsaminaeflora' or *R. yedoense* var. *yedoense* have neither pollen nor pistil, so they cannot be used in hybridizing.

Fortunately, not all double flowered azaleas are sterile. Upon careful inspection, one may notice that some doubles will have occasional stamens tucked among the petals. Sometimes, stray anthers with viable pollen will be attached to deformed petals and those can often be used for as a pollen source. Some doubles will have deformed pistils and those usually do not accept pollen well. Other flowers on the same plant may have a normal pistil and those are more likely to set seed. If interested in breeding for double flowers, it is helpful to look closely at those blossoms in order to find all the essential parts.

Flowers that are hose-in-hose, or having the appearance of two sets of petals, are usually female sterile. In other words, they will not set seed. Even though the flowers often have a normal looking pistil, there must be some structural problem that keeps the pollen tubes from reaching the ovaries and no matter how much pollen is piled on the pistil, they just never set seeds. "Never" is a strong word, though, and there are occasionally exceptions. In rare instances, a hose-in-hose flower can produce a chance seedpod. That implies that one

Photo Donald Hyatt

▲ 'Leopold-Astrid'

▼ Joe Gable's 17-year Quest: 'Rose Greeley'

Photo Donald Hyatt

flower must be deformed in some way to allow pollination but unfortunately there is no way for a hybridizer to tell which of the thousands of flowers on a plant might be the fertile one. The late George Ring found a stray seedpod on 'H. H. Hume' and seeds from that produced 'Ring's True'. Both are hose-in-hose and white. The reality is, if a hybridizer wants to use a hose-in-hose plant for breeding, it is best to use that plant as the pollen source.

Polyploidy

Most plants and animals are called "diploid." They have two sets of chromosomes containing their genes, one set from each parent. The actual genes, many thousands of them, are on those chromosomes and they are composed of DNA. The DNA controls what type of organism an individual cell will become and it is remarkably similar from the simplest one-celled amoebas to evergreen azaleas to humans. Most evergreen azaleas are naturally diploid with 13 pairs of chromosomes, or a total of 26 chromosomes. Humans have 23 pairs or 46 chromosomes, and more than 30,000 genes.

Scientists refer to a normal diploid organism as "2n" with "n" being the number of pairs of chromosomes. Tetraploid organisms have double the normal number of chromosomes, and they are listed as "4n." Tetraploids are rare in the animal kingdom but are much more common with plants. Plants with the extra chromosomes are often desired in breeding since they can have some very desirable characteristics, like heavier textured flowers or more robust growth habit.

There are some naturally occurring tetraploid evergreen azaleas like 'Banka' and 'Taihei' as well as several deciduous azalea species including *R. calendulaceum* and *R. austrinum*. How they became tetraploid is not clear. It is also possible to artificially convert a normal azalea into a polyploid but the techniques are often complicated and use toxic chemicals that are best applied under carefully controlled laboratory conditions. [2][4][5]

Tetraploids are promising in certain breeding efforts, but they can also cause difficulties. For instance, a tetraploid crossed with a diploid produces a triploid (3n) but triploids are usually sterile and cannot be used in further breeding. The azalea 'Redwings' is triploid, which explains why it has not been used in hybridizing. [4] There are also other polyploid possibilities with plants including hexaploids (6n) and even octaploids (8n), both of which are usually fertile. They can provide some interesting options when used in hybridizing.

There was an interesting scientific study about bicolor flowers that showed the blossoms have both 2n and 4n cells. [1] The researchers showed that 'Leopold-Astrid'. a stunning florist azalea that has double white flowers with the petals edged in red, has

both diploid and tetraploid cells. The plant itself is basically a normal diploid and the white center of the flowers is diploid tissue, too. However, the contrasting red edge is tetraploid and that causes the color change. This research would imply that tetraploid azaleas might not be useful when breeding for bicolor blossoms.

Knowing some of the science controlling evergreen azalea flower color inheritance is useful when seeking specific hybridizing goals, but there is still a lot of chance involved. Having all the desired characteristics come together in a seedling is really quite similar to playing cards. Each seedling will be genetically different from its siblings, and the assortment of genes it receives is comparable to dealing a hand in a card game. One shouldn't expect a Royal Flush in poker or Seven No Trump in bridge on every deal! The reality is that most of the seedlings will be average and sometimes even inferior to the parent plants. Only in rare cases will all the desired qualities come together in a single plant.

There is a humorous story about the brilliant playwright George Bernard Shaw that parallels this dilemma in hybridizing. Apparently, an attractive socialite once approached Shaw with the following proposition. She noted that with his great mind and her beautiful body, they would produce the most perfect child. Shaw replied, "But Madame, what if the child inherits my body and your brains?" He declined her offer.

And so it is with hybridizing. The probability of all desired characteristics coming together in a single seedling is usually quite low, so it is important for the hybridizer to raise many plants from a promising cross instead of just a few. No matter how many seedlings are raised, there is still no guarantee of success but understanding some of the science behind the cross can greatly improve the odds. Of course, if we never make the cross, there is no chance that we will get that winning new hybrid. When the azaleas are in bloom, start spreading around that pollen and give luck with a little bit of scientific thought a chance!

Photo Donald Hyatt

▲ 'Sandy Dandy'

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Don Hyatt *has been an avid hybridizer of azaleas and rhododendrons for more than 30 years, with a particular interest in deciduous azaleas, and has been teaching mathematics and computer science for more than 35 years.*

Azalea Research Foundation Funds First Research Grants

Hale Booth—Azalea Research Foundation

This past year marked a major milestone in the growth and development of the ASA's Azalea Research Foundation. In the fall of 2011 the recently formed Azalea Research Foundation awarded the first two research grants. Both of these modest grants are leveraging considerable additional investment of time and talent into needed azalea research, which was a fundamental goal behind developing this research arm of the Azalea Society of America.

Each research proposal was reviewed and scored by the Azalea Research Foundation committee members. Committee members had earlier developed and approved a written evaluation process which awarded points based on the review criteria. Based on each members review, both projects were selected for funding. The funded research projects are as follows:

Identification of a Virus Causing Azalea Ring Spot Disease

This proposal was submitted by Professor Rodrigo A. Valverde with the LSU Agriculture Center. This project supports research to identify a previously unobserved virus which was found in Southern Indica Azaleas in south Louisiana in the spring of 2011. This new disease is now being spread through commercially available azaleas and may soon appear in a garden near you. Our research grant will pay for chemicals and other expenses to help Professor Valverde identify the virus and develop screening methods. This will build the basic research needed for additional work to manage the disease. $2,000 was awarded for this research. In April 2012 Professor Valverde reported that this spring he had examined the azaleas at the US National Arboretum and found a different but similar mosaic virus present with those plants. Now Dr. Ramon Jordan, a plant pathologist with the US National Arboretum is collaborating on investigating the diseases. So you can see our modest investment is already leveraging considerable time and energy on benefiting azaleas.

Ploidy Testing of Native Populations of Deciduous Azaleas

This proposal was submitted by Sally and John Perkins of Salem New Hampshire. The purpose of the proposed project is to sample deciduous azaleas from eastern American populations to test for ploidy level. Approximately fifty samples will be tested as a result of this project, primarily from sites suggested by ASA members such as Copper Bald, Hooper Bald, Roan Mountain, etc. The results of this research will provide a foundation for future hybridization of new deciduous azaleas. Azalea Research Foundation funds will pay for chemicals required by the University of Coimbra to perform the flow cytometry on the 50 native deciduous azaleas. $500 was requested and awarded for this project. Samples will be collected in the fall of 2012. Mr. Perkins indicates that wild populations in West Virginia and Georgia have been identified for sampling. He is also working with Don Hyatt to identify some additional sample populations. At the ASA meeting in Asheville Mr. Perkins asked for help from ASA members in selecting populations and samples to be tested. If you would like to help with this research project by collecting and documenting samples for testing, he or Sally Perkins can be reached at **john.a.perkins@gmail.com**.

Complete results of these initial azalea research grants will appear in *The Azalean* upon completion of the projects.

Visit the **azaleas.org** website and select the research tab in the top left corner for much more information on your Azalea Research Foundation. Donations, questions and research proposals should be addressed to Hale Booth, Chairman, Azalea Research Foundation, 7085 Sawyer Pike, Signal Mountain, TN 37377.

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Call for Articles

The Azalean needs more good articles about azaleas, their care, and their use in the landscape. Ideas include:

- Articles describing new public gardens or special azalea collections being created in your area.
- Descriptions and photographs of Society members' gardens.
- Information about azalea festivals and sales.
- Historic garden restoration stories.
- Articles about noteworthy azalea hybrid groups or new species or cultivar introductions.

Submit articles as Microsoft Word documents. Illustrations are highly encouraged and at least 4 x 6 inches at 300 dpi.
Submit to: Preston and Bonnie Cooley, Editors, 6900 Skillman St., Unit 304C, Dallas, TX 75231,
E-mail: theazalean@gmail.com.

Some Thoughts on Breeding for Hardiness in Section Tsutsusi Azaleas

David Purdy—Omaha, Nebraska

I grow azaleas as a hobby in Omaha, Nebraska. Omaha is in hardiness zone 5. The temperature falls below minus 15 degrees Fahrenheit at least once every winter. The climate is continental, that is, erratic. The temperature can change by 50 degrees Fahrenheit in the course of an afternoon. High winds are frequent. Snow amounts are not large. Total snowfall might be 30 inches in the course of a winter. The snow gets blown around, so many areas are free of snow, while others are buried in drifts.

In this climate, azaleas have a hard time. Few commercial varieties will succeed. I have been trying to breed a broader spectrum of azaleas for the region.

Azalea breeding is a subject with great uncertainty. The theory of heredity is reasonably well known, but specific application for its application to azaleas is lacking. There is almost no information on the genes responsible for any azalea characteristics. The best one can do is attempt to apply the theory while guessing at the actual facts.

The basic strategy for breeding hardy azaleas is to cross a hardy parent with a beauty parent. When hardiness has been achieved, strategy may be changed to crossing plants, both containing hardiness parentage and beauty parentage. The species available as hardy parents are: *Rhododendron yedoense* v. *R. poukhanense* (known as *R. poukhanense*), *R. tschonoskii*, *R. kaempferi*, and *R. kiusianum*.

Poukhanense is the most commonly used hardy parent. There is no doubt about its hardiness. It has large lavender flowers and the plant habit is a little loose. It is a reasonably uniform plant, that is, one *poukhanense* plant is very much like any other. There is a narrow range of flower colors; mostly lavender with some tendency toward pink. One judgment about the plant is that, for most genes, it is homozygous. In other words, the plant will have two identical examples of any given gene.

R. tschonoskii is also very hardy. Indeed, it has the reputation of being the hardiest azalea. It is also quite uniform. However, it is of little ornamental value. The flowers are white and very small. There is only one named *R. tschonoskii* hybrid, Gable's 'Forest Fire'. It, too, has tiny flowers. Like *R. poukhanense*, *R. tschonoskii* appears to be largely homozygous.

R. Kaempferi has also been widely used as a hardy parent. It is less uniform than the two preceding plants. There is considerable variation in color.

R. kiusianum has less frequently been used as a hardy parent, possibly because it is generally considered less hardy than the preceding plants. It is a less uniform plant, with many flower color variations. I also find variations in hardiness. One lavender *R. kiusianum* seems to be just about as hardy as *R. poukhanense*. Pink and red forms do poorly in my climate.

When plants are crossed, each plant in the seed batch receives one copy of any given gene from one parent. If a plant is truly homozygous, each child plant will have one copy of each of its genes. Thus, all the products of a *R. poukhanense* or *R. tschonoskii* cross will have one copy of whatever gene or genes that produce hardiness. The tendency toward hardiness seems to be borne out in practice. Hardy poukhanense crosses include 'Cascade' (Shamarello, *R. poukhanense* x mucronatum), 'Mildred Mae' ('Gable', *R. poukhanense* x mucronatum), 'Zulu' ('Glenn Dale', *R. poukhanense* x 'Modele') and my variety 93 (*R. poukhanense* x unknown southern indicum). Unfortunately, the tendency is also to inherit the *R. poukhanense* lavender flower color, at least as an undertone. Only 'Cascade' escapes this curse. Further action is usually necessary to produce hardy ornamental plants.

The above discussion is a little simplistic. Just because a given version of a gene is present doesn't mean that it is expressed. The partner gene inherited from the other member of the cross may be dominant. An example of this tendency seems to be my variety 41 (*R. poukhanense* x salmon supermarket azalea). It is scarcely a hardy plant in Nebraska and rarely blooms.

A possible approach to further improvement in hardy azaleas is to cross more self *R. poukhanense* hybrids. With regard to hardiness, this approach seems to be somewhat disappointing. If both parents contain one copy of a gene that promotes hardiness, the probability that a given child plant will contain that gene is 0.75 If two genes are required to produce hardiness, the probability that a given child will contain both genes is 0.56. As the number of genes required for hardiness increases, the probability that a given child will contain all of them decreases further. This tendency is not a complete disaster. It just means more plants need to be grown to achieve a given result.

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In Memory: Emile Antoine Deckert, 1922-2011

William C. Miller III, Bethesda, Maryland

In the Fall 2011 issue of the Brookside Gardens chapter news, I reported that Emile Antoine Deckert had passed away on June 23, 2011. A founding member and the first president of the ASA, Emile was considered to be the "Father of the Azalea Collection" at Brookside Gardens.

With that in mind, I asked Phil Normandy, Plant Collections Manager at Brookside Gardens, whose employment there overlapped with Emile's from September 1979 to September 1980, to offer a few comments:

"Emile Deckert came to Brookside Gardens in the early 1970's and immediately set himself to the task of rescuing its original azalea/rhododendron garden, which had been improperly installed between 1967 and 1969. Not only did he bring it back to life, primarily by dealing with its poor drainage, but he also began to contribute uncommon and even historic azalea cultivars propagated from his own collection. By 1975, in keeping with Brookside's burgeoning formal garden development, Emile and his crews began clearing a wooded slope across the road from the original "Azalea Walk" (as it was called) and developing azalea beds and circulation paths. This effectively doubled the extent of Brookside's azalea plantings to the acreage they occupy today. Again, the majority of cultivars were supplied by him and were commercially unobtainable.

"In the course of his propagation and development work at Brookside, Emile compiled an extensive photographic slide library of its azalea cultivars to be used as an identification record. This has been most useful to the proper curation of Brookside's collections as even today no comprehensive reliable published photographic catalog of azaleas is available.

"Always restless to develop new gardens, Emile jumped at the opportunity provided by the 5-acre McCrillis Gardens property donated to Brookside Gardens in the fall of 1978. Mr. McCrillis had amassed an impressive labeled collection of azaleas, rhododendrons and rare companion trees and shrubs, but plantings were too crowded for best health and maintenance access, and a portion of the property remained undeveloped. Over the course of the next year and a half, Emile and his crews thinned woods, laid out expansive trails to accommodate visitors and maintenance vehicles, and moved hundreds of specimen azaleas from both the property and Brookside to fill the newly-created beds. At McCrillis' public dedication in May of 1980, Emile was formally recognized by Montgomery County's executive for this pivotal role in transforming a private estate into the beginning of a premiere public garden. His layout remains in place to this day, and many of his identification tags can still be found throughout.

"Emile left the Parks Department in September 1980 to travel and return to private business."

Emile was born on August 28, 1922 in Alsace, France — a region known for its vineyards, fruit orchards, and magnificent medieval villages. He was named after his uncle who had been killed in Russia on the eve of the signing of the Armistice that ended the First World War. Emile's mother was a midwife and his father was a German trained polmologist who encouraged his interest in plants. While Emile's grandmother wished that he become a priest and his mother wanted him to become a doctor, it wasn't to be. Just before his 18th birthday Emile was taken to Germany by the Nazis where he worked four years in a labor camp that produced German aircraft. After doing what he could to sabotage many of the aircraft engines, he eventually escaped and joined the French Underground. Soon after the end of World War II, he realized his dream and came to America in 1947. He became a citizen ten years later and having settled in Silver Spring, Maryland, he further developed his interest in horticulture and made many contacts at the University of Maryland and the Department of Agriculture in Beltsville. At one point, he met Ben Morrison which perhaps influenced his interest in azaleas.

In the 1970s Emile dabbled in the breeder's art and developed the (evergreen) Deckert hybrid azaleas. Galle lists only eight of the twenty-five cultivars. Descriptions and images of the Deckert azaleas can be found at: **http://naturesreign.com/EAD_Azalea_Culture_Info.html** or **http://tinyurl.com/7pr9tjm**

Of the Deckert azaleas that I've seen, my favorite is *Rhododendron* 'Alpenrose' (syn 'Jutta'), a 3.5 inch, single flower, pale salmon pink with a lighter center (not a well defined border); shades vary from flower to flower.

Soon after leaving Brookside Gardens in 1980, he and Jane spent 18 months in France. Upon their return, they established Azalea Hortico Gardens & Nursery on a 3.88 acre property in Hampstead, Maryland which they transformed into a show place with many azaleas, perennials, vegetables, fruit trees, maples, and dogwoods.

In 1998, having grown weary of specializing in the "high maintenance" azaleas, they changed the name of their business to "Nature's Reign" and realigned their focus to hostas, garden art, and European crystal, china, and jewelry. They transitioned out of the azalea business and started selling the most sought after Hosta cultivars including their own introductions, e.g., *Hosta* 'Templar Gold', *H.* 'Irish Moss', *H.* 'Incoming', and *H.* 'Majordomo'. Perhaps Emile's most notable introduction is *H.* 'Blue Mouse Ears' (a sport of 'Blue Cadet'). It was an odd individual that he received in an order of *H.* 'Blue Cadet' tissue culture. He planted it out and forgot about it for several years. Finding that the slugs ignored it, that it developed a mound-like growth habit, thick leaves and attractive flowers, he concluded it should be named. At a glance, he thought the newly unfurling spring leaves resembled the round ears of a little mouse, hence 'Blue Mouse Ears'. It was well received by the Hosta community. It won a blue ribbon and Best-in-Class in the Cutleaf Show at the 2001 Hosta convention. A specimen went for $250 at the 2001 plant auction.

Emile and Jane registered 'Blue Mouse Ears' in 2002. Additional recognition came in the form of: the American Hosta Society Blue Leaf Award for 2004; the American Hosta Society Benedict Garden Performance Award Honorable Mention in 2006; the American Hosta Growers Association Hosta of the Year for 2008; and the American Hosta Society Benedict Garden Performance Award of Merit for 2008. Sadly, Emile passed away two days before he was to receive the highest recognition that the Hosta Society can bestow — the 2011 Benedict Garden Performance Medal.

I don't remember when I first met Emile, but I visited him in Hampstead on two occasions, and I got to know him through the Brookside Gardens chapter's annual azalea flower show. Emile always managed to be available when I needed judges, and the reader will forgive me when I say that good judges don't grow on trees. I suspect Emile enjoyed the collaborative and cooperative effort that inescapably involves judging azaleas. In my capacity as a flower show official, I had many opportunities to observe the dynamics between the judges. Keeping judges focused and on track can be like herding cats. Emile had a marvelous balance of confidence and experience that smoothed the deliberative process and facilitated the judges reaching consensus. He was a good listener, he spoke softly, and he never steamrolled the other judges. At the same time, he was very generous with his knowledge, and he took the time to help the less experienced judges.

A personal note — Emile was intensely private, but he had a sense of humor. When I sent him an E-mail (December 2, 2009) inviting him to judge our chapter's 2010 azalea flower show, he promptly responded: "Hi Bill,— Well considering I just successfully underwent open heart surgery with a valve replaced, one bypass graft replaced, and an additional one added, looks like I might be alive and willing to participate as judge in May. — See you then, Emile." Without any outward manifestation of illness and lacking any hint of self pity or withdrawal, he truly had a positive perspective that I had to admire.

Emile Deckert's contributions to the development of the ASA, Brookside and McCrillis Gardens, and his beautiful azalea and hosta introductions will be living reminders of his many personal achievements.

Invitation to be Involved in Azalea Ploidy Research

Sally and John Perkins invite all of you who visit a wild collection of native azaleas this fall to send us samples.

Instructions for Fall 2012 Collection of Samples for Ploidy Testing from Wild Populations of Azaleas

Select typical plant from wild azalea population.
Collect 3 flower buds from the same plant. These 3 buds are considered a single sample.
Place each sample of 3 flower buds in its own Ziploc bag.

Label each bag with suspected species name and location of collection.

Mail bags with samples to the home address of Sally and John Perkins at your expense.

Email Sally and John Perkins at **sjperk@comcast.net** for more details on collection, storage, and shipment if you have an interest in collecting samples for our fall 2012 ploidy research.

Indian Azaleas at Magnolia Plantation

C. Preston Cooley—Historian,of Magnolia Plantation

On the banks of the Ashley River, fourteen miles above historic Charleston, South Carolina, lies one of the country's great horticultural treasures. It was here, in the mid-1840s, that the Rev. John Grimké Drayton began to create what has become the oldest public garden in the United States. Today, Magnolia stands as the country's last intact, large scale picturesque/romantic garden.

While age and size make the garden historically important, the real treasure is what the garden contains. Magnolia was one of the first gardens in the country to plant *Camellia japonica* outdoors on a large-scale. As a result, the garden now has the largest collection of camellias in the United States.

When spring comes another treasure of the garden explodes; the ancient splendor of colorful azaleas. In her book, *Magnolia on the Ashley*, published in the 1920s, Marie Clinton Hastie wrote about the beginnings of her grandfather's garden. She gives a very brief history of the Drayton family in Carolina and then goes on to write, "it was somewhere [in the mid 1840s] that the Azalea indica [was] introduced to Magnolia."

Years earlier a close friend of Rev. Drayton wrote a letter to *Garden and Forest* magazine in which he points out that "in 1848 he planted the first azaleas of his remarkable collection." While the letter is simply signed "S" very few people doubt the writer was none other than Professor Charles Sargent, then director of the Arnold Arboretum at Harvard University.

The number of varieties Rev. Drayton imported is astounding considering the azalea was not offered in American seed catalogs until 1814 and, even then, the plants were being grown and kept exclusively in northern greenhouses. These early plantings of azaleas at Magnolia-on-the-Ashley are significant because, as Jim Cothran and Andrew Kohr point out in Magnolia's Cultural Landscape Report, "Azalea Indica was not grown outdoors in the United States until John G. Drayton brought the plant to Magnolia in the 1840s."

These azaleas became known collectively as Southern Indian Hybrids and Fruitland Nursery in Augusta began offering them in their 1857-1858 Catalog, the original seed or cuttings possibly coming from Magnolia Gardens. Magnolia's collection of azaleas would grow so large that it garnered both national and international attention and it became a repository for "old" azaleas. So much so that in 1921 E. H. Wilson wrote in the *Journal of the Arnold Arboretum* that "the collection is of great interest as it represents very completely the "Indian Azaleas" known to the gardens of the '40s and '50s of last century." Mr. Wilson goes on to say that the varieties growing at Magnolia have been lost from most modern gardens. Fred Galle, noted azalea expert, places the number of "Indian" azalea varieties originally imported to this country in the upper 80s. If what E. H. Wilson wrote in 1921 regarding their loss is true, can any of these varieties still exist today, even at Magnolia? Thankfully, the answer is a resounding YES!

The discovery of some of these lost azaleas starts in 2008 when Magnolia Plantation and Gardens teamed with other public gardens around the country to form the Great Gardens of America Preservation Alliance. The purpose of this new organization was to find and save historic plant material, specifically azaleas and camel-

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Photo Miles Beach

▲ 'Prince of Wales'

Chapter News

Alabamense

Pam Thompson, Secretary

A meeting was held at the Birmingham Botanical Gardens on March 2, 2012 to reorganize the Alabamense Chapter of the ASA. There was an informative presentation by BBG's Executive Director, Fred Spicer, on Native Azaleas in the Southeast, followed by an interesting tour of the Kaul Wildflower Garden. Members of the chapter met briefly to elect the following officers: President Patrick Thompson, Vice President Larry Quick, Secretary Pam Thompson, Treasurer Billie Oliver, and Parliamentarian Dennis Pinkard. Patrick Thompson, Davis Arboretum Auburn University, was instrumental in getting the ball rolling. Bylaws have been formally approved and a bank account is being opened by the treasurer.

A second meeting was held at the Davis Arboretum on April 23rd, where Mr. Thompson presented slides on the Arboretum's Red Hills azaleas, *Rhododendron colemanii*, and a recently donated collection of several hundred native azaleas and deciduous hybrids. During the tour that followed, those in attendance were able to see numerous Red Hills azaleas in bloom from across the range of the species. At the first two meetings, more than 30 non- members were in attendance, and have been encouraged to become a part of the ASA. A good number expressed interest and are expected to join.

Upcoming activities of the chapter were discussed including a plant rescue on June 5th at Camp Hill, AL; a Providence Canyon Plum Leaf Azalea tour later in the summer; and a fall meeting featuring a seed swap and propagation techniques with Vernon Bush at Huntsville Botanical Gardens.

Northern Virginia

Barry Sperling, Corresponding Secretary

The Northern VA Chapter started an active spring on March 25th with a meeting at the Wildfire Restaurant in Tysons Corner, enjoying a dinner-quality brunch, arranged largely by **Carolyn Beck**, and then a well illustrated talk on Satsukis by Ajit Thakur, a long-time expert in both that group and bonsai.

On the morning of April 29th many members opened their gardens for viewing at the height of the spring display: **Fran** and **Andrew Boninti, Brenda** and **Joe Klimavicz, Dave** and **Patsy Meadows, Bob Stewart** and **Barry Sperling**. After that we all adjourned to the garden of **Dave** and **Leslie Nanney** for snacks and a continuation of the camaraderie. Many of the club members are packing for the annual convention as the spring rolls on!

Rev. John Drayton

Gloria Jean Williams, Corresponding Secretary

Kathy Woolsey, a representative from Cypress Gardens in Charleston, provided the program for our November 2011 meeting. Her talk gave special emphasis on the Red-headed Caterpillar that eats and lays eggs on our beloved azaleas.

These caterpillars, smaller than a grain of rice, eat the tender parts of the leaf. These pests are most active between July 4 and August 1. Look for and remove small dead branches and brown leaves. Eggs are deposited under the leaves, with about 80 eggs per clutch. These leaves should also be removed. Spinosad is effective control for these caterpillars but will also kill butterflies, other caterpillars, and moths.

Our January meeting was centered on the trip to France by club members Mr. & Mrs. Tom Johnson and Mr. and Mrs. Miles Beach. Among the numerous slides shown of the many gardens they visited, due to the time of year, the only azalea bloom seen was a blue one.

It is time to start planning for hosting the Azalea Convention to be held in Charleston in March 2014. Everyone is getting excited. Lots of work lies ahead but it will be a great time in Charleston.

Join us the 4th Monday of every month at Magnolia Gardens, 3550 Ashley River Rd, Charleston, SC 29414 843.571.1266. If you have questions, please contact Gloria Jean Williams @ 843.795.2584.

Texas

Sherrie Randall,Secretary

The Texas chapter held their spring meeting at the Tyler Junior College Center for Earth and Space Science Education in Tyler, Texas. This new state-of-the-art facility, formally the Hudnall Planetarium, features a hands-on exhibit area, instructional/workshop space and a series of outdoor educational plazas. The Center features a domed theater equipped with the Digistar 4, the latest in digital projection technology. TJC is one of only two facilities in Texas to utilize this new system – and one of only 50 worldwide. This renovation included a new surrounding garden planted with Texas proven plants with an emphasis on fall color. Tyler Junior College also features the Ina Brundrett Azalea Garden, which showcases 175 azaleas, and the James F. and Virginia H. Gatewood Garden which features various groundcovers.

Magnolia Plantation *(Continued from page 14)*

lias. J. Drayton Hastie Jr., a namesake of John G. Drayton, always believed the garden had rare plant material within its borders. The task was to find it.

Photo Miles Beach

▲ *'Prince of Orange'*

In 2010, Bart Brechter, curator of gardens at Bayou Bend in Houston, came to Magnolia to study the azaleas and locate, if possible, any rare varieties. Mr. Brechter covered only a small part of the garden, but found more than 10 rare, endangered varieties.

Tom Johnson, Magnolia's Executive Director, believes that once the survey expands many more rare, possibly extinct, varieties will be rediscovered. Over its 300 year history Magnolia has stood sentinel on the Ashley River, silently witnessing the events of our shared past, all the while guarding her own. A history now being revealed which will place Magnolia once again in the national consciousness.

C. Preston Cooley is from upstate South Carolina and was graduated with a BA in United States history from the College of Charleston in 2004. He has more than a decade of experience in the field of history education and heritage tourism. Preston is the official historian at Magnolia Plantation and Gardens in historic Charleston, SC. He lives in Summerville, SC with his wife, Bonnie, and their sons, Jefferson and William.

Chapter News *(Continued from page 15)*

Our featured speaker was Steve Brainerd, Park Development Superintendent, City of McKinney. Steve designed the Ina Brundrett Azalea Garden and the Jonsson Color Garden, the original azalea garden at the Dallas Arboretum. Steve is a former National President of Azalea Society of America as well as a past President of the Dallas chapter of ASA He has authored extensive articles for ***'The Azalean.'*** His presentation focused on the planting of azaleas for four-season color.

Following a brief business meeting, we were given a tour of the facility and garden by Mitch Andrews, director of the TJC advisory committee. His surprise to us was a private screening of one of the current shows, *Cosmic Collision*.

Vaseyi

Suzanne W. Medd, Secretary

On February 26, members met and discussed the programs for the year. Richard and Betty Becker graciously invited Vaseyi members to visit their garden in April, It was suggested that we also visit the garden of Marilyn Grist. This would allow a sneak preview of two of the premiere gardens of the convention.

On March 25, the convention planning committee met and worked out many of the final details. Bob Stelloh shared the beautiful "Appalachian Spring" T-shirt design.

A visit to Vivian Abney's East Fork Nursery was April's meeting with a picnic lunch. As usual Vivian had gift plants for all members!

On May 3rd, Vaseyi members set up their various convention areas, and prepared their gorgeous gardens; Marilyn Grist, the Collins, the Stellohs and the Bells were excited to share their work with visitors from around the country and the world. Mother Nature did not disappoint either because our chapter namesake, the native rare *R. vaseyi* was in beautiful early bloom on the Blue Ridge Parkway!

Our joint convention with ARS was a huge success. A hearty "Thank You" to so many hard working Vaseyi Chapter members!

Breeding for Hardiness *(Continued from page 11)*

Another approach is to use a variable parent, such as kiusianum. Here the tendency toward hardiness is less favorable in the first generation, since the hardiness parent may only have one copy of any gene that promotes hardiness. In that case, the probability that the gene is passed on to any given child plant is only 0.5. On the other hand, there is a chance that a favorable characteristic, such as color, will be passed on. Experience with my variety 96 (*R. kiusianum* x ('Ivan Anderson' x *R. oldhamii*)) illustrates this possibility. Some of these plants are hardy, with white, red, and lavender flowers.

Breeding efforts continue. Time will tell whether any of these ideas work out.

Flo Ann Bowen of Silver Spring, Maryland, was presented the 2011 Frederic P. Lee Commendation at the Brookside Gardens Chapter annual meeting on Sunday, December 4, 2011.

WE NEED YOUR HELP!

The 2012 joint ASA/ ARA convention was such a wonderful time! We would like your best memories and pictures to include in the fall issue of The Azalean. Who was your favorite speaker? Which garden did you enjoy most? What new things are you inspired to try in your own garden? From Friday to Monday, we want your input on this great weekend! Please send your thoughts and photographs to theazalean@gmail.com.

We look forward to hearing from you!