

THE

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VOLUME 20

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Azalea

Journal of the Azalea Society of America



1998 CONVENTION ISSUE

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Post Office Box 34536
West Bethesda, Maryland
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PRESIDENT'S LETTER

James O. Thornton

Conyers, GA

Folks, it's getting to be that time of year when we start our membership renewal process, and we need to think of how we can improve our numbers.

Bill Bode (our VP and Membership Recruitment Chairman) and I have been talking about ways to do this, and we'd like to share these thoughts with you. Please note they are in no particular order or priority.

First at the national level:

- officers and directors should take the lead in setting an example on membership recruiting activities
- set membership goals each year
- provide promotional material
- provide a certificate of membership to our commercial members
- provide one free ad to the new commercial member
- advertise in a national magazine prior to each new year
- request each chapter to have a membership chairman
- provide program material for use by chapters
- provide **THE AZALEAN** to colleges and libraries
- develop membership drives on a national level
- target propagators and growers at the corporate level and pursue horticultural schools, public gardens and arboreta
- develop a Marketing Manager position.

Now, let's talk at the local chapter level. Chapters could do some of these things:

- create membership committee/ chair
- make membership an item at every meeting
- maintain and distribute applications at all meetings
- provide applications to local garden centers, nurseries, colleges, county extension offices, etc.
- conduct at least one flower show each year
- provide news releases about meetings to local papers
- develop a chapter news letter
- follow up on prospective new members and non-renewals
- have an annual plant sale
- give new members a gift azalea plant
- develop a yearly calendar for publication in **THE AZALEAN**
- have annual cutting/propagation/swap meeting
- make plants available for sale at meetings
- promote chapter members for speaking engagements
- participate in craft shows and festivals
- promote **THE AZALEAN**—solicit articles

Friends, I could go on and on, but I think you get the picture. Just remember, this list is not at all encompassing. I'm sure that at your next chapter meeting you could come up with an even longer list of things to do. And look—you at-large members—I don't want you to feel left out! When you've read this and have given it some thought, make your own list of things you can do—and how about starting a new chapter? Think about it!

Like Jerry Springer says, "One final thought, now is the time for all good members to come to the aid of their society", the Azalea Society of America!

P.S. Please let me know if you have any comments.

*On the Cover: McDonald Hybrid 'New Generation Red'
Photographer: Sandra McDonald*

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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Dues notices will be sent out in November.
Please respond promptly.

CONVENTION OVERVIEW

Robert W. Hobbs

North Beach, Maryland

The 1998 convention, hosted by the Northern Virginia Chapter in McLean, Virginia, was smoothly organized and informative, focusing on hybridizing by local amateur and professional azalea enthusiasts. The date for the convention was chosen based on historical information on the peak bloom time for azaleas in the area. However, as so often happens, history is a good teacher, but history does not control the details of the advent of spring, so many azalea blooms were past their peak. However, there were more than enough azaleas to see, including lots of old familiar varieties and lots of new plants resulting from various hybridizing efforts. About 110 Society members attended. The fact that tours of local gardens were punctuated by showers and thunder storms did little to "dampen" the enthusiasm of attendees.

Evening talks included a round table discussion on hybridizing (remarks by George Ring are summarized on page 52 of this issue), a talk by Sandra McDonald on her hybridizing program and her named hybrids (article by Sandra McDonald on page 49), and a talk on finding stands of native azaleas by George McLellan (article on page 53).

Our garden tour on Friday started with the Azalea Society of America's George Harding Memorial Azalea Garden at the America Horticultural Society's River Farm. The George Harding Memorial Garden is filled with plants contributed by Society members and carefully planned, planted and cared for by members of the Ben Morrison, Brookside Gardens and Northern Virginia Chapters. On this rainy Friday morning, the garden was very impressive.

Next we visited the Japanese style azalea garden of Anita Frazer. Anita and her late husband, Art, were active in the founding of the Society. Then on to the garden of Dave and Sharon Raden where we enjoyed lunch amid many mature azaleas. After lunch we visited the estate of Margaret White, whose 13 acres of rhododendrons and azaleas is a horticultural showplace. Last, we visited the compact garden of hybridizer Bob Stewart. Bob's one-acre hillside garden is packed with plants in the ground, plants in containers, and many seedlings, which are the product of his hybridizing efforts, awaiting to be selected.

On Saturday we visited the garden of Joe Klimavicz, where both seedlings and blooming azalea plants were evidence of his enthusiasm (and his family's enthusiasm) for hybridizing. After visiting the finely cared-for Beck garden, we drove to the countryside of Haymarket, Virginia, to the five-acre garden of Phil and Frances Louer, where lunch was served. The Louers have over 2,000 varieties of azaleas interplanted with other foliage and flowering plants. After lunch we visited the manicured garden of Don Hyatt where we could

see the mature plants of azaleas and rhododendron that Don has introduced as a result of his hybridizing activities. The garden tours ended with a drive across the Potomac River to the Beaudry garden.

The Convention was completed with the traditional banquet, keynote speaker and annual business meeting. The minutes of the business meeting were printed in the June issue of **THE AZALEAN**. □



Attendees Enjoy Frazer Garden



Left to right; Mrs. Bill Bode, Society Vice President Bill Bode, and Society President Jim Thornton

Photographs by the Author

Thanks to the Northern Virginia Chapter
for organizing the convention

AZALEA HYBRIDS OF SANDRA MCDONALD

Sandra McDonald

Hampton, Virginia

*M*y interest in hybridizing began in graduate school when I studied plant genetics under Dr. Gustav Mehlquist at the University of Connecticut in Storrs. He had been active in hybridizing carnations before I knew him, but when I was working with him, his projects were raising orchids and trying to breed perennial, hardy, red delphiniums and hardy rhododendrons for the New England climate. Working with him was a memorable experience, and he certainly drilled a few of his ideas and philosophies into most of his students. Those of us who worked closely with him got our hands dirty, pulled weeds, learned to keep records, evaluated and scored plants, and took care of plants. We pricked off thousands of seedlings and worked with them at various stages of growth. We learned that we needed goals, but also needed to keep our eyes open for serendipitous events.

After getting out of graduate school and into the nursery world, circumstances were different. Most working nurseries cannot afford to put a lot of money into research and development and to grow thousands of seedlings to find and test new plants. In a few of my early crosses I did prick off and grow on in pots all of the azalea seedlings. These were supposedly tender and probably tetraploid hybrids to be used in the florist trade, and they took up a lot of space in one greenhouse. I did grow them up to blooming size and scored all the seedlings with their blooms as I had learned to do in school. However, that was not very practical, so I selected out the better ones which turned out to be my "Can Can Chorus" and sold off or discarded the rest. I planted a few plants of the "Can Can Chorus" outside, and some have been hardy enough to survive in Hampton, Virginia, for many years, although I would not recommend them for colder climates. Many of these named and better selections were propagated and sold to local florists. Perhaps some of them were planted out in other people's yards, too.

The crosses were evergreen Belgian Indian hybrids 'Loelia' (often in the trade as 'Loelia Alba') x 'Ambrosiana' and 'Ambrosiana' x 'Joan's Choice'. ('Joan's Choice' was a bright red hose-in-hose Belgian-type tender hybrid from the Eastern Shore of Virginia). The 'Loelia' x 'Ambrosiana' cross produced many double-flowered plants in several shades of pink. Most were fairly dark pink, a few were lighter pink and some had a moderate degree of hardiness. The cross of 'Ambrosiana' x 'Joan's Choice' produced mostly tender red plants. None of the red ones I tried outside survived.

I decided to concentrate on hardy azaleas and rhododendrons so as not to take up precious greenhouse space except in the early part of the growing process when the plants did not need much room.

I have been working toward several different and sometimes mutually exclusive goals: small plants, incorporating good qualities from greenhouse-forcing azaleas into hardy azaleas, new flower shapes, and new flower markings and colors. In the early days I used the Beltsville Dwarf 'Dainty Rose' to get smaller plants that would not take up a lot of garden space. These plants are not as dwarf as their mother and do not grow very fast. Therefore, they are not too popular with nurserymen who like to raise a plant to saleable size quickly, but they are good for people who like to grow azaleas and do not have

much space to grow them. This group of hybrids dates back to 1975. 'Blushing Angel' is one of this group, though it is larger-growing than most of the others. 'Little Cherub' and 'Dainty Angel' are siblings of 'Blushing Angel' and result from a cross with 'Ho O' or 'Appleblossom'. 'David's Choice', 'Salmon Sunrise' and 'Salmon Mound' are also in this group and result from a likely cross with 'Salmon Beauty' (Domoto) or possibly Bobbink and Atkins' 'Gloria'.

Another group of hybrids came from crosses of 'Ripples' x 'Evening Glow' and of 'Ripples' x 'Girard's Hot Shot'. 'Ripples' is a Howard Kerrigan hybrid from California. Galle's book says it is 'L. C. Bobbink' x 'Rosebud'. (A favorite we have been growing for years is 'L. J. Bobbink', which is a hose-in-hose white with a purple edge. I do not know if that "L. C." and our "L. J." are the same plant; but a hose-in-hose flower should not set seed so perhaps it is a different plant.) 'Ripples' is a very double pink. 'Evening Glow' is a light salmon hose-in-hose seedling from the Eastern Shore with a bit of a sprawling habit. The plants in this group turned out to be mostly very double. The cross with 'Evening Glow' produced a few shades of double pinks, and the cross with 'Girard's Hot Shot' produced mostly double, dark pinkish reds or double reds similar to the color of 'Hershey Red'. Both of these crosses are well behaved. They do not grow too fast. Occasionally I take the hedge shears to them if the salt spray burns back the tips, or if they seem to be getting too crowded. They come back beautifully. 'Williamsburg Rose' came out of this group.

I have carried on with 'Girard's Hot Shot' in several crosses. Recently I have taken a double red from the 'Ripples' x 'Girard's Hot Shot' group and crossed it with the very dark red 'Kara Fune' and have obtained some redder double flowered plants. The flowers are very nice, but the plants are not old enough to evaluate their habits yet.

'Girard's Hot Shot' was also crossed with the USDA 'Hershey Red Tetra'. 'Hershey Red' does not set seed of course, and I don't know if the pollen is any good, as I have never been able to do anything with it. However, 'Hershey Red Tetra' did have some good pollen, although not a lot. I used 'Girard's Hot Shot' as the female in order to get seed set. I remember that cross well, and it did not set a lot of seed since it was probably a cross of a diploid with a tetraploid. Some seed germinated and some resulting seedlings were weak and died off. However, eighteen plants grew well enough to set out in the field. One plant had a rose colored flower, and the rest were two shades of red: one the shade of 'Hershey Red' and the other a more pinkish red. I am pretty sure that the group of plants I got from this cross is tetraploid. They are all hose-in-hose, have heavy substance to the flowers, and the pollen looks like it is viable. A couple of named plants from this cross are 'New Generation Red', a larger 'Hershey Red' type, and 'Rosy Frills', which has frilly dark pink hose-in-hose flowers. These plants do not look a lot different from other red azaleas on the market, but I thought them worth naming because they are probably tetraploids. There are already millions of 'Hershey Red' azaleas growing in yards and perhaps there is still room for some of the tetraploid progeny.

The reason I am working on red azaleas is that red is a best seller in the plant world, though I actually prefer the more subtle and delicate pinks, whites, and light yellows (deciduous azaleas). I crossed the large, somewhat tender forcing azalea 'Venus' (a Henson hybrid) with 'Girard's Hot Shot'. I used 'Girard's Hot Shot' a lot because it was bright red and hardy. In this case I used it because I was hoping it had some recessive characters in the flower color genes that might allow the expression of the creamy quality and "white blotch" of 'Venus' (and also 'Easter Parade'). The cross worked. I grew a very large number of plants, and a large number of them were the unremarkable single rosy reds. However, I had perhaps 10 or 15 of the creamy-type plants. When I entered one of them in the Middle Atlantic Chapter

ARS truss show one year, one azalea fancier said it looked like a Dreamsicle (ice cream bar with orangy coating), therefore the name of the plant.

Most of the creamy selections from this cross had flowers about the size of 'Dreamsicle', which is larger than the 'Girard's Hot Shot' flower, but a good bit smaller than the 'Venus' flower. Dr. Mehlquist used to tell his class that when you cross two flowers of very different sizes, the resulting flower size will be closer to the size of the small parent than the large parent. This seems to be true in this cross. The reason I mention this is that my 'Venus' Baby' which supposedly came from this same cross has a much larger flower, more the size of 'Venus'. This makes me quite suspicious of the 'Venus' Baby' parentage. It is possible that an ant may have carried a pollen grain from an anther to the stigma of 'Venus' and a selfing of 'Venus' resulted. But since 'Venus' Baby' has proved a lot hardier than 'Venus' in our yard, I am keeping 'Venus' Baby'. I do not want to throw it out just because it does not fit or that an ant or I made a mistake. This is one of those cases of serendipity or recessive genes getting together.

I think something strange is going on with this cross. In addition to the odd color pattern, and the one plant with extra-large flowers, there are things happening with these genes. I crossed 'Girard's Hot Shot' back onto ('Venus' x 'Girard's Hot Shot') and got more trays of mostly trash (large single reds, whites, and dark salmons), but two hose-in-hose creamy, light salmon pinks and one creamy, light salmon pink with petaloid or occasional pom-pom center also appeared. One of the hose-in-hose creamy pinks was a weakling and died when overwhelmed by the bigger single reds, but one is named 'Pearly Pink', and the petaloid to pom-pom center flowered plant is now under observation. I cannot figure out why so many oddities appeared in this cross. I think some of the plants may be tetraploid because of the heavy substance to the flower, though I have not counted the chromosomes or looked at the pollen grains or stomata under a microscope. (Sometimes I miss the equipment and facilities we had at school.) In the case of tetraploids, the ratios for the expression of recessives

become very small, not the simple 1:4 expression of a recessive for a simple diploid. As more than one gene usually affects flower color, the number becomes even smaller and very large numbers of plants need to be grown to have a good chance of finding the one plant you want which expresses the recessive genes that are your goal. Perhaps there are several recessives hiding in this gene pool that only show up when many plants are grown.

'Elsie Lee' is another of the plants I like a lot. I do like lavender and this one is very hardy. Selfs of 'Elsie Lee' produced 'Chessie's Pink' and 'Chessie's Lavender'. Both are quite hardy. 'Chessie's Lavender' has a rather graceful, bubbly looking plant habit, not stiff and upright like 'Elsie Lee'.

Another group that turned out well is 'Gumpo' (white) x 'Wakaebisu'. I love the delicacy of the pale salmon hose-in-hose 'Wakaebisu'. 'Williamsburg', the hose-in-hose white striped salmon, is from this cross. (Several years ago I sent cuttings of several of my azaleas to California where someone probably mixed up labels and my 'Williamsburg Rose' is being distributed as 'Williamsburg' in some places there. A local garden center buyer brought this fact to my attention.) For us 'Williamsburg' usually blooms very, very late in the second week of June. 'Pure Perfection' is also from this cross. 'Pure Perfection' is hose-in-hose with lovely wavy white petals. Another one is a newer selection 'Sandra's Dwarf White' which has been very dwarf for me. Several other hybrids have come from my late Satsuki crosses. The plant habits are very nice, and the late blooms prolong the azalea blooming season.

Another group I have been working on recently is a cross of a plant whose name is unknown to me which is a large single pink with a very nice rounded flower shape that came as a rogue in some plants from de Wilde greenhouses times my 'Blushing Angel'. I have not been able to identify the large pink, though there is one Australian plant that looks somewhat like it. Whatever it is, it produced some quite nice new hybrids. Some are hose-in-hose, and some are single.

The colors are mostly my favorite soft pinks and white with many being two-toned pink and white and at least one having salmon stripes and flecks. The flower shape is especially nice and round, sort of like a pansy.

I have grown seed of azaleas from the ARS Seed Exchange, and some nice plants have come out of this. If someone makes a cross that looks like a good idea or is something I may have wanted to try, I will give their seed a try. I have grown several of Don Hyatt's crosses because we seem to have similar goals in some of our crosses.

I have described only a few of my plants here, but they are primarily from crosses that produced several good selections. Over the years I have noticed that a few crosses produce quite a few nice plants and some only one or none. In other words, some parents are better than others. In hybridizing there is always something new to look forward to, blossom types that have not been seen before or that are in different combinations that have not been made before. It is very rewarding work. Even when catastrophes happen, and something good dies, that makes space for something new. Hybridizers are optimists and usually keep on hybridizing as long as they can get around.

Sandra McDonald received degrees in chemistry, horticulture, and plant genetics and is now semi-retired from the nursery business. She is currently editor of the Holly Society Journal, a member of the board of Directors of the American Rhododendron Society and active in many other plant organizations. □



'Dreamsicle'



'Pearly Pink'



'Williamsburg Rose'

Photographs by the author

HYBRIDIZING AZALEAS

George Ring

Bent Mountain, Virginia

Hybridizing azaleas is easy and interesting—including planning the crosses, sowing and growing seeds and selecting the best plants. Out of hundreds of crosses, and perhaps thousands of seedlings, I have selected five (5) for registration. They are:

'Lucent' = 'Dream' x 'James Gable'
 'Taenzer' = 'Moonbeam' x 'Beacon'
 'Ring #1' = Parentage unknown
 'Orchido' = 'Polar Seas' x 'Debonaire'
 'Fairfax' = 'Polar Seas' x 'Debonaire'

All of those selected for registration are very floriferous and "good doers." They are hardy to at least -5 degrees F. Selections were made after at least ten years of observation. Of the five, 'Fairfax' has the best winter foliage. Some

of the crosses were made with the intent to obtain pastel-colored flowers. I find this goal somewhat elusive, although 'Taenzer', 'Orchido' and 'Fairfax' approach pastel effects.

There are several others still under observation, including some 'Elsie Lee' crosses and hybrids of *Rhododendron tschonoskii* x 'Sam'.

Since moving to Bent Mountain, I find that some varieties of evergreen azaleas do not bloom well every year. This may be partly due either to winter cold or to lack of sufficient heat to grow well here. Other varieties grow well even in the cooler summers, but lack sufficient flower-bud hardiness in some winters.

SPECIES EVERGREEN AZALEAS Categories and Hardiness Zones	
Kyushu	
<i>kaempferi</i>	5b-9a
<i>kiusianum</i>	7a-8b (some varieties are much hardier)
<i>sataense</i>	7a-9a (parent of kurumes?)
<i>komiyaamae</i> (= <i>tosaense</i>)	7a-9a
Ryukyu	
<i>macrosepalum</i> (= <i>stenopetalum</i>)	7a-8b
<i>ripense</i>	?
<i>scabrum</i>	8b-9b
Chinese	
<i>simsii</i>	8a-9b (parent of Belgian Indicas)
Indica	
<i>indicum</i>	7a-10a (parent of So. Indians, with <i>simsii</i> and <i>mucronatum</i> hybrids)
<i>eriocarpum</i> (= <i>tamurae</i>)	7a-10a
Taiwan	
<i>nakaharae</i>	6b-9a
<i>oldhamii</i>	8a-9a
<i>rubropilosum</i>	7b-8b
Korea	
<i>yedoense</i> var. <i>poukhanense</i>	6a-9a
Small Leaf	
<i>serpyllifolium</i>	6a-8d
<i>tosaense</i>	7a-8a
<i>tschonoskii</i>	5a-8a
<i>microphyton</i>	alpine-like <i>tschonoskii</i> but native to China
<i>tsusiophyllum</i>	6b-8a low-tubular flowers
<i>yakuinsulare</i>	similar to <i>simsii</i>
<i>otakumi</i>	improperly called "yakuinsulare" in the U.S.
Tashiroi	
<i>tashiroi</i>	a link between evergreen and deciduous azaleas?
Other	
Over 30 uncommon or uncultivated species. Not much is known about them.	

SEARCHING FOR THE NATIVES

George K. McLellan

Gloucester, Virginia

I am continuing to make a few evergreen azalea crosses using the hardier plants here, such as some Lanny Pride selections, Schroeders, and some species that have not been used much by others that offer promise for small size and adaptability to cool summers and cold winters. These are: *R. kiusianum*, *R. serpyllifolium* and *R. tschonoskii*. All three of these have small flowers, but can produce floriferous hybrids. By contrast, most of the current evergreen azalea hybrids available have been developed with *R. kaempferi*, *R. yedoense* var. *poukhanense*, *R. sataense*, *R. indicum*, and other species listed in the table on page 52.

If you have never hybridized azaleas, you will find Chapter 12 by August Kehr in Fred Galle's book *Azaleas* on hybridizing most interesting and helpful. There is a wealth of information on only ten pages in this chapter. In the same book, Appendix C, there is a brief article on the "Inheritance of Flower Color" by J. Heursel which includes information on the probable fertility of double and single flower parents. For example, he found that:

Female hose-in-hose x male
single flowers usually will not
produce seed.

It is therefore necessary to use a single flowered azalea as the female parent crossed with male hose-in-hose in order to produce seed. Knowing this will save you a lot of time making crosses.

All hybridizers have their own goals for making crosses. Whatever your goals, you will learn interesting things about azaleas when you make the crosses and grow the seed to blooming size plants.

George Ring has been a hybridizer of rhododendrons and azaleas for over 30 years. A Civil Engineer, he is retired from the US Department of Transportation and from the Research Board of the National Academy of Sciences. He is a Past President of the American Rhododendron Society. □

This evening we shall travel with the Middle Atlantic Chapter ARS as we explore for native azaleas in the eastern United States. I hope to give you all a view of the species we have explored for and a taste of the trips we have taken up to this point in time.

The goals of our Native Azalea Study Program are to give us a better understanding of our azaleas and to produce a definitive slide program on all of the eastern native azaleas, which will be offered to other groups and organizations for their use. The program will be completed for the ARS Eastern Regional Fall Meeting at Williamsburg, Virginia in 1999.

By investigating the natives in their natural habitats we hope to understand where they grow, how they grow and especially their genetic diversity. This will be useful in helping us grow the natives in our gardens and perhaps give us information and plants to create better hybrids for our growing conditions.

Our trip this spring to investigate *Rhododendron canescens* and *R. austrinum* led us to southeast Mississippi, south Alabama, south Georgia and the panhandle of Florida in the last week of March. This year we were perhaps a week early because only about 25% to 33% of the plants we saw were in full bloom, and the rest were in opening bud to tight bud. This again impressed upon us our belief that by proper selection of different clones of a species, one can have a long period of bloom of many species.

Generally, we found *R. canescens* growing near water and sometimes at sites that must flood for short periods of the year. Flower color was mostly pale pink with a deeper pink tube but we did find some pure white clones. I was impressed by the large number of flowers in the truss of *R. canescens* and its tall graceful habit of growth, both characteristics which it seems to pass on to its hybrids, in my experience. The most unique *R. canescens* we saw in a cut-over woodland west of Tallahassee, Florida, was a plant with a white ball truss of fragrant flowers that at a distance resembled a viburnum.

R. austrinum seems to like more dry sites and can often be found on the bluff of some of the larger rivers, although at times we found *R. austrinum* and *R. canescens* growing and blooming side-by-side. The best blooming stand we saw was in Torreya State Park in Florida on a high bluff overlooking the Apalachicola River. Torreya State Park contains a very interesting selection of native flora and is well worth a visit. Again the genetic diversity of *R. austrinum* was very interesting in the yellow to gold flower color, with and without red to pink color on the flower tubes, and in the flower size and plant size. We agreed that the most interesting *R. austrinum* we saw was one that had us standing on our brakes when we saw it on the side of the road. From a distance it was a deep coral color and closer inspection showed it to be deep coral red in bud that opened and faded to an apricot shade with coral tubes, again found in northern Florida.

Our search for *R. periclymenoides* (Pinxter-bloom) has been in Virginia, West Virginia, and Maryland. It superficially resembles *R. canescens*, but prefers dryer woods, higher lands and generally has a more northern range. It seems to pass a greater range of flower shades, white to pink (pale and deep) to lavender pink, and sometimes (rarely) upon opening the flower has pale yellow blotch. It can be differentiated from *R. canescens* by the use of a hand lens

when viewing its flowers. *R. canescens* will have **hairs with glands** on its flower tubes while *R. perclymenoides* generally has **hairs without glands** on its flower tubes.

R. atlanticum has become one of my favorite species, because of its toughness. I have seen it come back and bloom after being bushhogged, burnt and even after herbicides have been sprayed on it (it takes some four to five years to recover and start blooming from this). It is a dwarf, very fragrant azalea that is extremely stoloniferous. I remember seeing several clones intertwining and blooming in a multiple colored patch of flowers that extended for a quarter of an acre or more. Standing in the middle of such a patch was like standing in a perfume factory.

R. atlanticum flowers occur mostly in shades of white to pale pink. The pure white will sometimes appear cream in bud, while the pale pink clones have deeper pink buds that upon opening fade to pale pink or white.

R. prinophyllum is another very fragrant azalea that we have studied in the mountains of Virginia and West Virginia. Perhaps our favorite spot to see *R. prinophyllum* is Dolly Sods Wilderness. Its flower color ranges from pale pink to deep pink, and we have seen a few individuals with a faint yellow-gold blotch. The greatest variation seems to be in flower size and shape.

Most of the *R. viscosum* we have observed has been in the coastal plain of Virginia in low swampy woods, although we have seen occasional specimens of the mountain version of *R. viscosum* in western North Carolina. Almost all individuals have been pure white with rare individuals having a pale pink tube. The greatest genetic diversity of this species seems to manifest itself in its bloom season having a bloom range from May to September or past.

The pure white azaleas that we find in the mountains of the southeast have



R. calendulacum Jane Bald Roan Mountain



R. arborescens hybrid Gregory Bald



Azalea hybrid Gregory Bald

Photographs by the author

generally been *R. arborescens*. It is easy to separate from *R. viscosum* because of the perfectly smooth stem of its new growth. Its fragrant flowers are white with contrasting red stamens and style. You will find some with a yellow blotch and many with pink buds and a certain amount of pink streaks in the flower. Its attractive foliage can vary from deep green to a slight blue-green. It is found near water, either along high mountain rivers and streams or near springs where its roots can get to water.

The flame azalea or *R. calendulaceum* is one of the world's most beautiful flowering shrubs. Our favorite spot to see *R. calendulaceum* in the wild has to be the highlands of Roan Mountain on the North Carolina-Tennessee border where for some reason the quality of the flowers seems to be the best I have seen in *R. calendulaceum*. Its flowers range from yellow to gold, to orange to red and various combinations of these colors. Some of our favorites are what we call "the changeable" flowers that start pale yellow, change to pink and fade to red. There is a real genetic diversity in bloom times of this species, and it would be easy to have a different individual of *R. calendulaceum* in bloom in one's garden over a period of a month or more by careful selection of different clones.

R. cumberlandense is closely related to the flame azalea *R. calendulaceum*. It is a diploid whereas *R. calendulaceum* is a tetraploid (the only tetraploid member of the section Pentanthera). *R. cumberlandense* usually blooms later and tends toward deeper orange-red and red than does the flame azalea and is found in the Cumberland Mountains and Plateau. But it can be hard to separate where it occurs with the flame azalea at high altitude in eastern Tennessee, western North Carolina and northern Georgia. In these areas similar looking plants will take some study with a hand lens (generally *R. cumberlandense* has eglandular pedicel and sepal margin while *R. calendulaceum* will generally be glandular (reference 1)) to separate.

The most fascinating azaleas we have seen in our trips are the natural hybrids that occasionally occur. We have visited three swarms of our native azaleas: Gregory Bald in the Great Smoky Mountain National Park; Copper Bald in western North Carolina, and Audra State Park in West Virginia and have seen other scattered hybrids in our travels.

The hybrid swarm of azaleas atop Gregory Bald (4,949 feet) has become world famous among people who admire our native azalea and has been visited by such as Dr. Henry Skinner, Fred Galle, Dr. August Kehr, Peter Cox and many, many more. It is a grassy summit fringed by scrub trees and contains thousands of azaleas, both in thickets and as free-standing plants covering about 15 or more acres.

The flowers range from pure white with yellow to gold blotches, pale yellow to golden yellow, different hues of salmon to peach pink, some with deeper blotches, a full range of hues and tones of orange with striking gold blotches, light to deep reds, strong vivid purplish reds, pale fuchsia with gold blotches, deep pinks, medium pinks, pale pinks with and without blotches (reference 2).

This swarm is said to involve up to four species (*R. cumberlandense*, *R. arborescens*, *R. viscosum* and probably *R. calendulaceum*) which have crossed and back crossed probably since the late 1920's when the land was given to the National Park Service.

We were introduced to Copper Bald by Mr. Ed Collins of Hendersonville, North Carolina, who was doing a detailed study of this hybrid swarm. He has found *R. arborescens*, *R. cumberlandense*, *R. viscosum* and *R. calendulaceum* present on this mountain top. The hike to Copper Bald is much shorter and easier than Gregory Bald but the search for azaleas is harder, because the bald has been overgrown with trees and brush. We were there early in the 1997 season, and saw only the

early blooming varieties which were hybrids of *R. arborescens* but this area contains a range of flowers like the Gregory Swarm.

The most recent swarm we are studying is in Audra State Park where *R. calendulaceum*, *R. periclymenoides*, and *R. arborescens* have been found. Doug Jolly of Flatwoods, West Virginia introduced us to this beautiful hybrid swarm on a low ridge overlooking the Middle Fork River. Doug has just begun to study this swarm, but has found many plants with *R. calendulaceum*-like flowers in shades of apricot, rose, pink and combinations of these and *R. periclymenoides*-like flowers in pinks and white with prominent gold blotches.

I would urge all of you to get out and look at our native azaleas, especially the populations that may be close to your homes. It is a very enjoyable and informative pastime but be warned it may become an addiction. I have climbed to Gregory Bald five times and Roan six or more times. All of our members have been giving our favorite azaleas nicknames and considering them old friends that we like to visit each time we are in the area to check on their well being and health. So get out and enjoy!

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George McLellan's garden has been twice featured on the Virginia Garden Tour and included on the Gloucester Daffodil Tour, and has been described as "one of the loveliest in America." He has hosted numerous plant societies and actively participates in the American Rhododendron, Camellia, Azalea, Holly, Virginia Native Plant, and American Rock Garden Societies, and the Southern Appalachian Conservancy. □

'GEISHA' vs. 'FESTIVE'

Donald H. Voss

Vienna, Virginia

Confusion in the identification of 'Geisha' and 'Festive' has long been noted in conversations in the "azalea world." From the hybridizer's descriptions published in Monograph 20 (Morrison, 1953), we learn that 'Geisha' has markings of Ridgway's Livid Purple and has a chartreuse blotch. 'Festive' is marked with a dull rose between Ridgway's Spinel Red and Rose Color but has no blotch. 'Geisha' has a somewhat smaller flower than 'Festive'.

Many plants listed as 'Geisha' in private and public collections appear to be 'Festive'. Even a plant at Ten Oaks Nursery (a recipient of the original distribution from Glenn Dale) appears to be 'Festive'. Plants at the National Arboretum were propagated from the Ten Oaks plant, and these have markings of a color consistent with the description of 'Festive' in Monograph 20. They are usually very close to Rose Color, but slightly darker and very slightly redder toward Spinel Red.

But what is a real 'Geisha'? Here we encounter the unanswerable question of why Morrison cited Livid Purple as the color of markings on 'Geisha'. Livid Purple is a grayed, relatively low-chroma color slightly darker and less saturated than Bishop's Purple but essentially of the same hue. Bishop's Purple was chosen to describe the markings of 'Quakeress'. We can infer, then, that the markings of 'Geisha' should be fairly close in hue to those of 'Quakeress', but darker and duller.

In the spring of 1998, I measured the colors of markings on flowers of several plants labeled as 'Geisha' (see Acknowledgments). When measured, the markings on the Louer and Stewart plants of 'Geisha' are in the proper hue range, but have much higher chroma than the Ridgway Livid Purple color chip (see table). The Newman 'Geisha' is slightly redder in hue and larger in size than the Louer and Stewart plants, raising some doubt as to its conformity to Morrison's description.

In selecting Livid Purple as a descriptor, was Morrison looking at the "full color" that one encounters in self-colored flowers and in many of the markings of azalea flowers? Or did he concentrate on hue and select a color chip that did not match the lightness and chroma of the markings (a procedure frequently encountered)? Were the markings seen by Morrison "full color" or was the pigmentation in a layer of cells beneath a white layer and, hence, considerably grayed? Whatever the reason for the choice, if we accept that it was based on careful observation, then we are faced with the existence of a large and very real difference between the colors of 'Geisha' and 'Festive'.

Why do so many plants labeled 'Geisha' turn out to be the color of 'Festive'? There is a dreadful lack of hard information but no lack of possibilities:

The person who made the color evaluations when 'Geisha' and 'Festive' were being described for Monograph 20 may have erred—through improper color-evaluation procedure or, even though unlikely, as a result of poor color discrimination.

Error could have occurred at the time of the original propagation and distribution from Glenn Dale—because of the previously mentioned considerations or possibly mislabeling. Also, the physical work involved in picking the plants and preparing them for ship-

ment may have been assigned to individuals lacking detailed knowledge of the differing characteristics of 'Geisha' and 'Festive'.

The occurrence of sporting on correctly identified plants of 'Geisha' and subsequent propagation of sports has been offered as a possibility. I consider, however, that a hue shift necessary to move from a hue angle of about 334° to one of about 360° would be a very rare occurrence.

Similarly, these sources of error could have affected propagation and distribution from the nurseries that received the distribution from Glenn Dale—and so forth and so on down to friendly cutting exchanges among collectors.

Barring the possibility of error attributable to faulty color vision, one consideration in the widespread misidentification is that almost no one in the chain of distribution once material left Glenn Dale would have had a Ridgway color chart. And unless one has seen Livid Purple in a Ridgway chart, the name does not convey much impression of the color. Oh, yes! One can consult a dictionary and learn that "livid" can mean lead-colored or ashy pale. How many of those receiving a plant labeled 'Geisha' would know that it should have Livid Purple markings, question its color, and consult Monograph 20 and a dictionary (much less be able to visualize Livid Purple)?

One keen observer of the azalea scene (Malcolm Clark, personal communication) recalls only a few plants labeled as 'Geisha' that conformed to the description in Monograph 20. One was at the 1976 American Rhododendron Society convention, a plant with a blotch that was chartreuse but not "screaming"! Mal saw a plant labeled 'Geisha' at Longwood Gardens that may have been correct—it was not 'Festive'. Both Tingle and Hohman had plants labeled 'Geisha' that were 'Festive'.

A Non-conclusive Conclusion

From their seed-lot, Bell, and Plant Introduction numbers (Miller and West, 1994), it is evident that 'Geisha' and 'Festive' were among the earliest of the plants in the Glenn Dale breeding program. This suggests that they were "old friends," well known to Morrison before increasing administrative responsibilities intruded on his work with azaleas. To me, this suggests that his distinction between the colors encountered in the two plants is no less important as a criterion than is the presence or absence of blotch or the flower size.

The marking colors of the two cultivars are not close; a widespread lack of knowledge of the Ridgway colors designated in Monograph 20 has probably contributed to the present confused state. Unfortunately, the above-noted discrepancy between the chroma of Ridgway's Livid Purple and the chroma in flowers of the hue appropriate to Livid Purple leaves us with an unanswered and probably unanswerable question.

The ubiquitous 'Festive' plants with 'Geisha' labels most probably resulted from a distribution error at Glenn Dale. We all know how easy it is to mislabel plants, and some of this undoubtedly has occurred at subsequent levels of distribution. But the presence of the Ten Oaks plant and anecdotal evidence of incorrectly identified plants at Tingle's and Hohman's nurseries lend support to the hypothesis of error at Glenn Dale.

That said, we suggest the following as characteristics distinguishing the two cultivars:

'Geisha'
Marking Color
 moderate reddish Purple
Blotch
 chartreuse (area and extent not specified)
Size (across)
 1-1/2 to 2 inches

'GEISHA' vs. 'FESTIVE'

Published Descriptions

'GEISHA'

Monograph 20 - Flowers 1-1/2 to 2 inches across; white with chartreuse blotch, flaked and striped with Livid Purple. *Galle* - Flowers 1-1/2 to 2 inches across; white, blotch yellowish Green, flaked and striped reddish Purple.

'FESTIVE'

Monograph 20 - Flowers 2 to 2-1/2 inches across; pure white with no blotch, freely sanded and occasionally striped with dull rose (between Spinel Red and Rose Color). *Galle* - Flowers 2 to 2-1/2 inches across; white, no blotch, sanded and striped purplish Red.

Colorimetric Equivalents of Ridgway Colors

	Munsell		C I E L A B		
	Hue	Value/Chroma	Hue Angle	Lightness	Chroma
LIVID PURPLE					
Measured	0.4RP	4.0/ 5.4	334	41	25
Hamly	9.9P	3.9/ 6.5			
ROSE COLOR					
Measured	6.0RP	5.3/12.9	357	54	56
Hamly	5.0RP	5.8/ 9.1			
SPINEL RED					
Measured	9.4RP	4.6/10.3	8	47	47
Hamly	8.5RP	5.3/ 9.9			

Note: The "measured" coefficients were obtained by measuring (with a Minolta CM-2002 spectrophotometer) the respective color chips in a well-preserved copy of Ridgway from the National Medical Library. The "Hamly" Munsell notations are from visual evaluations made by Hamly (1949), roughly adjusted for the renotation of the Munsell system (Newhall, 1943). Hue angle relates to a circular arrangement of hues with a slightly purplish Red at 0°(360°), Yellow at 90°, slightly bluish Green at 180°, and Blue at 270°..

Flower-color Measurements 1998

	Munsell		C I E L A B			Size (across)	Blotch
	Hue	Value/Chroma	Hue Angle	Lightness	Chroma		
'GEISHA'							
Newman	2.4RP	4.6/12.3	341	47	54	2"	strong
Stewart	0.7RP	5.1/12.6	336	53	54	1-1/2"+	weak
Louer	0.1RP	5.0/12.2	334	51	53	1-1/2"+	weak
'FESTIVE'*							
Voss	8.0RP	4.6/13.1	2	47	58	2"	none
Newman	7.5RP	4.7/13.8	1	49	61	2"	none
Louer	6.8RP	5.2/13.6	359	53	59	2-1/2"	none
NA32760	7.9RP	5.0/13.6	3	51	60	2"	faint
NA32760	6.2RP	5.3/13.5	358	54	59	2"	faint

*Except for the Newman plant, these were acquired as 'Geisha'

Also, by visual evaluation of color:

National Arboretum plants labeled 'Geisha':

NA60867-J	close to, but slightly darker than, <u>Rose Color</u>	2"	faint
NA60867-H	do.	2-1/4"	none
NA68571-H	do.	2"	none
(NA)UMHN-S	do.	2-1/4"	none

It may be useful to recall that the color specified in Monograph 20 for 'Geisha' markings is similar in hue to that of 'Quakeress' but slightly darker and slightly grayed.

'Festive'
Marking Color
strong to vivid purplish Red
Blotch
none
Size (across)
2 to 2-1/2 inches

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Acknowledgments

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Donald H. Voss is an economist by training, and an active gardener with a scholarly interest in azaleas and rhododendrons. He is an expert on the azaleas of Robert Gartrell (Robin Hill hybrids), and is a former chairman of the Society's Board of Directors and former keeper of the Society's database. Don currently volunteers at the herbarium of the U.S. National Arboretum. □

Cultural Note

SEED PROPAGATION

Reprinted from the February 1998 Issue of the Oconee Chapter Newsletter.

At the first meeting of the Oconee Chapter of the Azalea Society of America, October 20, 1991, a panel of four members of the Chapter and azalea authorities Raymond Goza, James Harris, Allison Fuqua, and Joe Coleman discussed propagating azaleas from seeds. Their presentations and discussions were video taped. It was planned to show this tape at the December meeting, but time did not allow. The newsletter editor, however, viewed the video. Some comments by the speakers were not clear, so there may be a few misunderstandings. Therefore, the panelists are welcome to present a rebuttal or state the ways they have modified subsequently their methods in a future newsletter. Highlights of the discussion follow:

RAYMOND GOZA: This (October) is the proper time of year to get seeds before they open and spill, although some may still be green. If so, let them dry. Propagation is done in a plastic shoe box, which has holes burned with a soldering iron in the box. The box is washed and disinfected with a one part Clorox® to ten parts water solution. Ground pine bark is put in the bottom with sphagnum moss on top. Previously he used milled sphagnum, but once it could not be found, so he used regular sphagnum moss and it worked fine. He now uses it although he would prefer the more costly milled sphagnum. The moss is moistened before adding seeds. He demonstrated by sprinkling the small seeds on top of the moss without covering with additional moss. (A small amount of seeds produces a large quantity of seedlings). Next, water containing Captan® [a fungicide, ed.] was sprayed over the moss; this forces the seeds down crevices in the moss and moistens them. A plastic lid is put over the box and after a while condensation forms under the lid. The box is labeled with name of hybrid, method of pollination, and date. The box is kept in a greenhouse in high shade or on a window sill out of direct sunlight at room temperature (e.g., 70-75 degrees F). If sunlight is unavoidable, a newspaper is put over the box to shade it. The box is watered by putting it into a pan containing about ½ inch of water every week or two, and the soil adsorbs water from the bottom. After a few weeks the seeds germinate. The seedlings are removed and potted when they are one to two inches tall. He fertilizes with one-half teaspoon Peter's liquid fertilizer per gallon of water (at one-fourth strength) when plants are approximately an inch tall.

JAMES HARRIS: Seeds are picked and dried. It takes seeds from deciduous azaleas two to three weeks and seeds from evergreen azaleas three to four days to dry. Crosses require three to four months to mature. He disinfects containers with a one to ten Clorox® solution (i.e., one part Clorox® to nine parts water). The containers have holes in the bottom. The seeds are put onto a planting mixture of three parts pine bark, two parts perlite, and one part Canadian peat. A box is two-thirds filled, firmed up, and watered well with a finger partially over the opening of a soft-drink bottle and left for 24 hours and then watered again. (He demonstrated crushing seedpods in his fingers to allow the small seeds to fall onto white paper, which was gently shaken over the medium.) One-half teaspoon Captan® is added to a pint of water, and the solution sprayed over the seeded moss to wet it down. A glass is put on top of the box, and the box is put under cool-white fluorescent tubes. Evergreen azaleas can be exposed to the light for 24 hours and deciduous azaleas for no longer than 18 hours. No fertilizer is used. Roots should grow to the bottom of containers. If they only grow halfway down, they are not getting enough

air...and you might as well use clay. Therefore, modify the composition of the medium.

ALLISON FUQUA: All materials are screened through a three-eighth-inch screen. Sphagnum moss is ground, either chopped in a small food chopper or ground in a nutmeg grinder. These are passed through a window screen. Any sort of plastic container can be used (e.g., clear plastic containers from markets or butter containers from grocery stores). Butter containers, for example, are large enough for a package of 30-50 seeds from the ARS seed exchange. Holes are not punched into the containers. The containers are disinfected with a solution of one part Clorox® and nine parts water. The seeded boxes are kept under cool-white fluorescent tubes. Seeds are obtained from plants in his yard, the mountains, and seed exchanges. Seed from the exchange are usually received in March or April, and they are planted when they are received. If they are to be held, keep them in a refrigerator or freezer; under these conditions they can be held for months. Otherwise they deteriorate, and the yield will be diminished. The planting mix used is a mixture of six parts pine bark, one part peat, one part perlite, and one part commercial potting mix; it is not passed through a screen. Captan® is used. A fan may be necessary to get air circulation. Without circulation, plants have died in a week. A variety of instruments can be used to transfer seedlings from the containers to pots.

JOE COLEMAN: Although the basic procedures had been covered by the time Joe was called upon, he highlighted his procedures and filled some gaps. The container can have a solid body with a clear top. Direct north light (some sunlight needed) is used for germination, which takes a couple weeks. He uses sphagnum moss that has natural inhibitors to fungi. Nevertheless, he uses Captan® that is good, cheap and an old favorite. The seeds are initially contaminated with fungus, so sterility of containers is

important. He uses one part Clorox® to ten parts water. The seeds will germinate faster without air, but will stop growing at a certain height, and they can be kept for up to four months at any stage after germination in closed containers. After seedlings have sprouted (two sets of two leaves; one-fourth to one-half inch high), he slides lids back a little each week to allow air to reach the seedlings to minimize shock. The seedlings are removed with tweezers and put in flats containing Nature's Helper. Nature's Helper is not sterile and contains a normal bacterial flora; this aids the seedlings to adjust to the "real world" and, thereby, minimizes shock. When the plants start to grow, he fertilizes them lightly with one-fourth strength liquid fertilizer every four weeks, and in late winter and early spring. Normal fertilization can wipe out an entire tray.

DISCUSSION: A question was asked about the length of time from planting until the plants bloom. Most of the panel answered about two years, but the moderator commented that it could range from two to seven years. (Answers to other questions have been inserted into the section of the person giving the answers as part of the presentation.)

OTHER INFORMATION: Seed propagating procedures have also been summarized from a 1987 panel discussion by Allison Fuqua, Raymond Goza, Mary Beasley, and Joe Coleman in the November 1996 Oconee Chapter Newsletter. Procedures used by Charles Owen and Jeff Beasley are presented in the November 1995 issue. The video that was described is available for loan from Jim Thornton.

Additional comments by Allison Fuqua that were made at the December 7 meeting follow: He prepares soil and uses containers as described above. The containers may or may not have holes in the bottom; if they have holes, put them on an aluminum dish so that water does not run out. The moss is watered with a solution containing a teaspoon of Captan® per

gallon of water; a small quantity of detergent aids water uptake. After watering, set the container on edge to allow excess water to drain out. Seeds are spread on top of the moss. The moss needs to stay damp, so when it dries out, water again. Put the containers on a window sill on the north side of house or use lights for 16-18 hours. Plants come up in about a month. Use a knife to slit the tip of the cover, make the slit larger in two to three days, and enlarge again later, and then take cover off. Use a potting stick to dig out or dampen the moss and pull seedlings apart. Put the seedlings one inch apart into three-inch deep potting material. When they fill in, dig them out and put them in a two-inch pot. Progressively increase the pot size one-half to one diameter, and spread roots when transplanting.

Frank Bryan, Newsletter Editor

Back Issues Sale

The special sale of complete sets of back issues of **THE AZALEAN** which was announced in the June issue is still being planned. Details will be in a future issue of **THE AZALEAN**.

Decorative License Tag Available

A special license tag is available for members of the Society. It may be ordered from Society President Jim Thornton at a cost of \$5.00 postpaid. Chapter Presidents are encouraged to put together bulk orders for chapter members. Jim Thornton's address is: 884 June Drive, Conyers, GA 30207. Telephone & Fax No. 770-483-1593.



