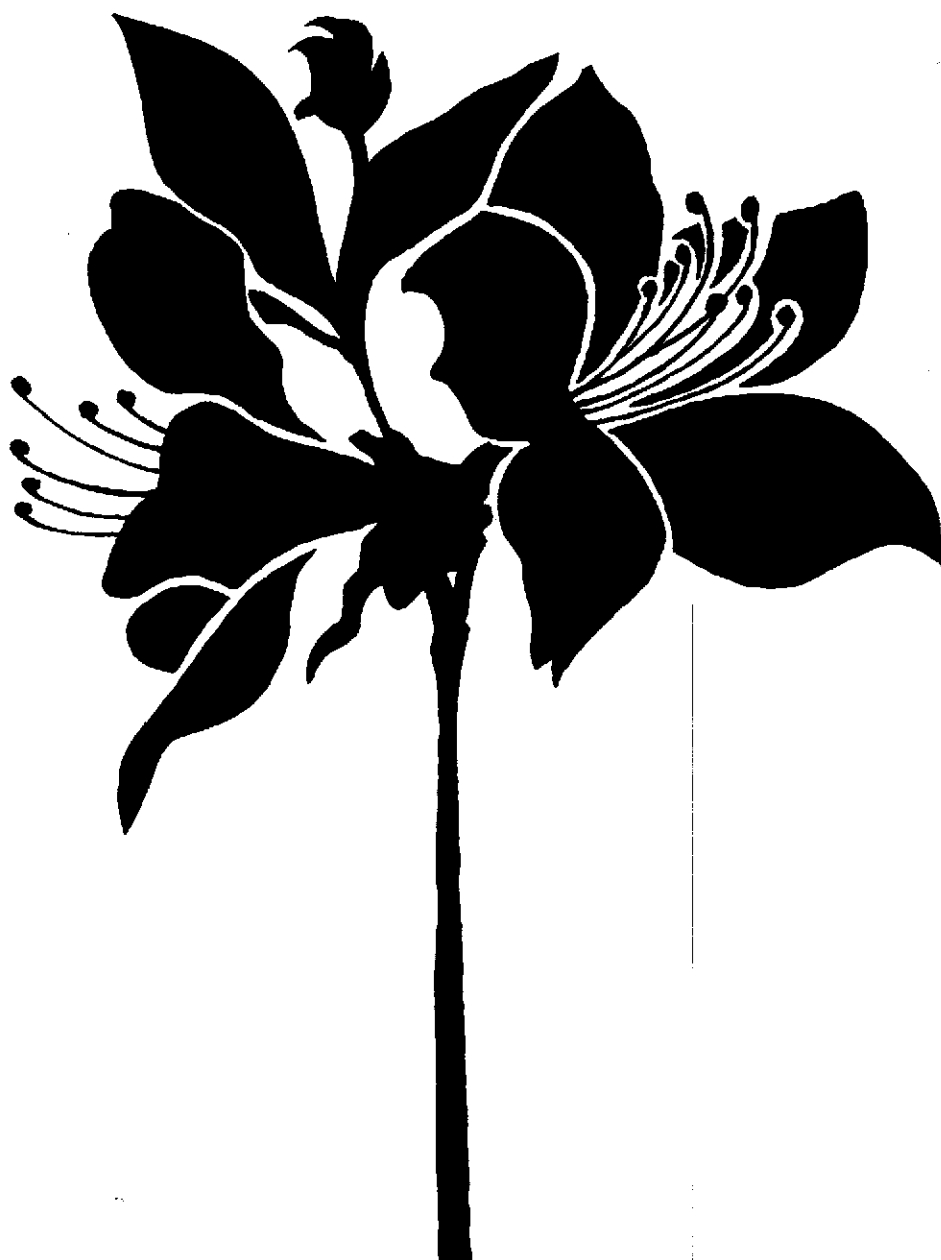

THE AZALEAN

Journal of the Azalea Society of America

Volume 5 Number 3

September 1983



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

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THE AZALEAN

The Journal of the Azalea Society
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THE EDITOR'S NOTEBOOK

In this issue of **THE AZALEAN**, we are pleased to include three addresses delivered at the Fifth National Meeting of the Azalea Society of America held in Chevy Chase, Maryland, during April 29-May 1, 1983. Also included is a report of the Society's Glenn Dale Preservation Project at the Plant Introduction Station of the U.S. Department of Agriculture in Glenn Dale, Maryland, the major tour of the 1983 National Meeting.

We are grateful to the speakers for documenting the substance of their addresses and to Dr. John Neal, the fourth speaker at the Meeting, for his contributions which have been published in the March 1983 issue of **THE AZALEAN**. For those individuals not in attendance there is no way that **THE AZALEAN** can bring to you the fellowship, the beauty of the azalea flower show, and the experiences of the tours of Brookside Gardens, the McCrillis Garden, and the Plant Introduction Station of the 1983 National Meeting. Next year find out for yourself and share the experience. Attend the Sixth National Meeting to be held next May in Fredericksburg, Virginia, and the Seventh National Meeting in the Mobile, Alabama, area in 1985. Watch for details in future issues of **THE AZALEAN**.

Charles H. Evans

* * * *

LETTER TO THE EDITOR

Planning a National Meeting - One Perspective

I believe the best preparation for planning a National Meeting is to have participated in one. However, common sense and sufficient lead time for planning are the essential ingredients for putting together a successful and enjoyable program.

The sponsoring chapter, through an organizing committee, plans and runs the activities of the National Meeting. Historically, the National Society plays a very superficial role in the National Meeting process, and this is as it should be. The National Meeting is a time for Society members to gather to learn about azaleas, to see azaleas in a new locale, and to meet with Society members, new as well as old acquaintances.

Hosting a National Meeting is an exhilarating experience. Stake out a year and claim it. Present your proposal to a Board of Governors meeting that you want to host a specific National Meeting. Do not wait for an invitation. I can testify to the fact that it takes more than a year of preparation, because the committee planning the 1983 Meeting did not have that luxury and we paid for it in reduced options.

With a little advance planning, the location and dates of future National Meetings could be a regular agenda item announcement for the Annual Meeting portion of each National Meeting—a common practice of many organizations. The locations of future National Meetings ideally should be established three to five years in advance so that the host chapter has sufficient time to raise the necessary funds, select a meeting site, and assemble a first class program. In developing the program, one must decide where the emphasis is going to be. Will it be speakers, an azalea flower show, visits to gardens and nurseries, a plant sale, or something else? It is important to carefully select the "center of operations"—a hotel, a low cost non-profit educational center such as the National 4-H Center where the 1983 meeting was held, or some other facility. Do not delay in selecting the site. The longer you wait, the fewer options will be available as other groups will be competing for the same resources. Not until a date and emphasis are selected and a site chosen can the tentative schedule of events be formulated.

Questions you will want to answer—Will on-site staff be available to provide the necessary support or will your chapter members be responsible? Is there adequate parking? Can personal security be assured? What is the plan for accommodating the attendees? Is the price for the rooms within a reasonable range considering meals, sightseeing and other family or personal preference options? Are bed and breakfast considerations realistic? Will an option to stay with local chapter members be included? Will buses be required for meetings or other functions?

Be sure to schedule plenty of time for socializing. Aside from the pleasure of having the time to visit with many fine folks, these socializing periods can double as time buffers should schedule adjustments become necessary during the course of the meeting.

Above all, keep things simple. Keep options to a minimum to avoid confusion during the registration process. It is neither necessary nor desirable to schedule numerous conflicting events, since that only serves to fragment the group. Get the registration material out as soon as possible. It should be in the hands of the membership no later than six months before the meeting.

I hope that every chapter will seize the opportunity to host a National Meeting. Azalea Society members want to see your area and to talk with you about which azaleas and techniques do best in their area compared to yours. That is what we are all about—to appreciate and further our understanding of azaleas. Join in the goal of widening our knowledge of azaleas—Host a National Meeting.

William C. Miller III, President
Brookside Gardens chapter and
Program Arrangements chairman,
Fifth National Meeting, 1983

OUR NATIVE AZALEAS

Martha Prince
Locust Valley, New York

Our native azaleas are only now being "rediscovered" by Americans, although it was early in our history that many of them were first found and admired. Among the plant explorers were the Bartrams of Philadelphia; William Bartram, in his *Travels*, called the Flame Azalea "The most gay and brilliant flowered shrub yet known." He wrote those words in Georgia, two hundred years ago. It is a surprising fact that American azaleas have been little used in American gardens.

Most of the azaleas we see are not native to this country. The familiar mounds of springtime color are of Asiatic descent and are evergreen. All the species we have naturally are deciduous (lose their leaves in winter). They offer a fine choice of colors—white, pinks, reds, and even the yellows and oranges lacking in the evergreen varieties.

All azaleas are rhododendrons. *Rhododendron* is a genus in the Heath Family, a large grouping of such related, but diverse, plants as the blueberry and the strange little white Indian Pipe. Azaleas are divided into sections, or subseries, and our natives fall into two of these classifications. Most of them have five petals (lobes), five stamens and a long corolla tube. Two American azaleas, however, have a different look. These are the Rhodora of New England and the Pinkshell of Virginia: here the three upper petals are grouped together, as the two lower ones. There is no corolla tube. These basic groups are easy to separate, even for an amateur.

The final classification, into species, has been a puzzler for the best taxonomists. Many of the azaleas grow in the same place and bloom at the same time. In Georgia, for instance, which has more species than any other state, there are many lovely azaleas produced by wandering bees; most botanists throw up their hands when confronted by these "hybrid swarms". The listing below follows the usual classification, but names are already being changed.

THE SIXTEEN SPECIES



R. alabamense, the Alabama Azalea. This rare white azalea grows in a restricted area of Alabama and west central Georgia. The dry woods in which it is found are perfumed by the delightful lemon fragrance of the blossoms. This species, of low to medium height, was not found until late in the nineteenth century. In typical form it is pure white with a yellow blotch on the upper petal; sometimes there is a touch of pink. On Long Island, it is in bloom in mid-May.



R. arborescens, the Sweet Azalea. A native of states from Georgia to New England, this white azalea is one of the most fragrant of all. It is also one of the most hardy and one of the easiest to propagate. In typical form, the flower is pure white with a contrasting red pistil; the buds often show some pink. Occasionally there is a yellow blotch; pink and even yellow-blooming plants have been found. The Sweet Azalea is medium-to-tall in height, and generally blooms in this area in late June. Some forms bloom in July. This species is also called the Smooth Azalea, to distinguish it from *R. viscosum* with which it is sometimes found. Anyone who has come across the Sweet Azalea on a mountaintop in the South is not likely to forget it.



R. atlanticum, the Coastal Azalea or the Dwarf Azalea. Colonies of this low-growing azalea are found in the flat coastal areas from South Carolina to New Jersey. The typical form is white, but in the open pine woods of the South it is often pink. The plant is so stoloniferous that one plant may spread over a very large area. The fragrance might be described as pungent. The average Long Island blooming time would be mid-to-late May. Although it has not been used much in gardens, its low growth habit makes this an attractive species.



R. austrinum, the Florida Azalea. This lovely yellow-blooming shrub opens its fragrant yellow flowers before the middle of May, on Long Island. In the native area (not only northern Florida but from southwest Georgia to Mississippi) this is one of the early signs of spring; it is open by the end of March. The blossoms are not large, but are very showy. The plant is tall. Many forms have a reddish corolla tube. Both in its native habitat and on Long Island, *R. austrinum* has *R. canescens* as its blooming companion.



R. bakeri, the Cumberland Azalea. This usually-red azalea was one of the most recently classified. The name was first given to plants growing near Wolf Pen Gap, in the Georgia mountains. In growth habit it may be very low and twiggy, or of medium height; color varies from clear red to orange-red, and sometimes almost to yellow. *Bakeri* can be confused with the

Flame Azalea (though not under a microscope--the Flame has a double set of chromosomes). Perhaps the most famous collection of this azalea is on Gregory Bald, a mountain in the Great Smoky Mountain National Park. There it grows with others, including *R. arborescens* and a "swarm" of varying pink hybrids. July 1 is the approximate blooming time here.

R. bakeri 'Camps Red'. This name form, from the mountains of Kentucky, is a fine red.



R. calendulaceum, the Flame Azalea. William Bartram, two hundred years ago, described the colors of the Flame as "The finest red lead, orange and bright gold, as well as yellow and cream." This is probably America's best-known azalea. A tall plant (some-

times almost a small tree), it is found in the eastern states from Georgia to New York, and westward to Ohio. Usually the Flame is a hill or mountain plant, but is adaptable and hardy. It can be found in profusion in the mountains at an elevation of five thousand feet, but it will do well here in the lower altitude of New York. Not native to Long Island, it blooms here in June, over a span of several weeks. The Flame Azalea was used in the European hybridization of the Ghent, Knaphill, and Exbury azaleas.



R. canadense, the Rhodora New England poets and writers often mention. Rhodora, it is a much loved small azalea, although some "connoisseurs" tend to dismiss it as scraggly and of supposedly poor color. The color is a pinkish lavender in the usual form,

although a pure white is sometimes seen. The flowers (and those of *R. vaseyi*, its closest relative in this country) are two-lipped, the three upper petals being together. In exposed places Rhodora is very low-growing, although it may reach three feet in height in woods and bogs. The leaves are an unusual color for an azalea, being grey-green. They open after the flowers bloom. This azalea is found naturally as far north as Labrador and Newfoundland. Blooming time on Long Island, where it is not native, is during the latter part of May.



R. canescens, the Piedmont Azalea. This usually pink-flowered azalea is probably the most abundant of all our species. Masses of it are found in most of the lower South (including northern Florida); it grows west into Texas. The plant is often quite tall.

The ease with which it hybridizes may account for the pink tinge in many of the white azaleas, and even for the red tube of the yellow *R. austrinum*. The Piedmont Azalea is occasionally found in a pure white form. In a usual spring, the blossoms will open on Long Island about May fifth.



R. nudiflorum, the Pinxterbloom now listed as *R. periclymenoides*. Visually, one can mistake the Pinxterbloom for *R. canescens*. However, the range is more northern--it extends from upper Georgia to Massachusetts. As in *R. canescens*, the corolla tube is long

and slender; the tube, and the pistil and stamens, are usually a deeper color than the petals. The name *nudiflorum* is given because the plant is more or less "nude" of leaves when the flowers open. As in many azaleas, unusual colors have been found; Dr. Skinner, former Director of the National Arboretum, once discovered a purple flower with a yellow blotch. The Pinxterbloom was one of the azaleas used in hybridizing the Ghent azaleas in Belgium during the first part of the nineteenth century. It was known in England many years before that. A native of Long Island, it has almost disappeared here, a victim of "development". In this area *R. nudiflorum* blooms about May 12.



R. occidentale, the Western Azalea. A very beautiful and varied species, this is our only West Coast azalea. The flowers can be larger than any of the others, and the colors and forms can be unusually fine. *R. occidentale* likes water, and can be found growing on

hillsides over underground springs. Up to the present, successful plantings have been rare in the East; watering deficiencies may be responsible. The typical flower, if such exists, is white with a yellow blotch. Others are pink, cream, striped with red, and possibly many still unfound variations. While the petals on most plants are only slightly ruffled, some lovely flowers have a tightly frilled edge, almost lacelike in appearance. The blooming season is an extended one.

R. occidentale 'Leonard Frisbie'. This has frilled white petals, striped in a reddish pink, and a yellow blotch.

R. occidentale 'Stagecoach Frills'. Pretty pink-tipped buds, and a frilled edge on the petals make this small azalea usually attractive. The flower is white with a yellow blotch.



R. prunifolium, the Plumleaf Azalea. Another of the rare azaleas, this one comes from a small area near Fort Gaines, Georgia. It grows in only a few counties in Georgia and adjacent Alabama. *R. prunifolium* is a handsome shrub, with red blooms opening

when the plant is in full leaf. The flower resembles *R. bakeri*, although the plant is much larger. Usually a June bloomer, some *R. prunifolium* bloom into the autumn. The lateness suggests interesting possibilities for azalea hybridizers to develop summer flowers. Most of the Plumleaf Azaleas presently in Long Island gardens bloom about July Fourth.



R. roseum, The Roseshell Azalea. This azalea is a good and hardy pink, growing in the Virginia mountains and up into New England. The plant is of medium height. As *R. roseum* grows in some of the same areas as does *R. nudiflorum*, and as the color can be

similar, there is a possibility of mistaking one for the other. However, one visual clue is the length of the corolla tube; the Roseshell has a much shorter tube. Any plant lover who carries a small pocket magnifier (an interesting thing to do!) will find the tube of the Roseshell covered with hairs bearing tiny round glands. There are no glands on the Pinxterbloom. In older books on botany, this azalea may be listed as *prinophyllum*. On Long Island *R. roseum* may be expected to open its blossoms about May 20.



R. serrulatum, the Hammocksweet Azalea. Although not a showy plant, the Hammocksweet has the garden-virtue of being a very late bloomer. Most plants of *R. serrulatum* bloom in July, but some forms prolong the azalea season into autumn. The flowers

are white and small, with a very long, slender corolla tube. In a massed planting they can be attractive, and they add a fragrance to the garden. Naturally, the Hammocksweet Azalea grows in upper Florida and west to Louisiana.



R. speciosum, the Oconee Azalea. The Oconee Azalea is the earliest of the orange-to-red azaleas to bloom. Although both the plant and the blossoms are smaller than those of the Flame Azalea, *R. speciosum* has the same brilliance. The native habitat is

a restricted one; it occurs only in a narrow area of central Georgia and South Carolina. Some of the best colors may be seen along the Savannah River. In our area, flowering is during the latter part of May.



R. vaseyi, the Pinkshell Azalea. With the Rhodora, this azalea belongs to a different group than do our other natives. Its other near relatives are indigenous to Japan. In earlier years, it was not classified as an azalea at all, but as "Biltia" (a word no longer

used). The three upper petals are grouped, and there is no corolla tube. There may be seven stamens rather than five. The usual form is pink, with a touch of green in the throat and some peppery red dots at the base of the upper petals. The flowers appear before the leaves, with a very pretty effect. A native of mountainous North Carolina and Virginia, the plant is now listed as a Threatened Species. It thrives in New York; here it can be expected to bloom at the end of April.

R. vaseyi 'White Find', a fine white form. The dots on the petals are green rather than red. 'White Find' seems to bloom a few days before the pink form.



R. viscosum, the Swamp Azalea. This widely distributed white azalea is sometimes called "Clammy Honeysuckle" (for its sticky flowers). A native from Georgia northward, it does grow in wet areas and along streams, but is also found on mountains where the

clouds must provide the needed moisture. *R. viscosum* is a close relative of *R. serrulatum*, although the range is more northerly. A visual difference is a shorter corolla tube. The blossoms are very fragrant, in a spicy way; while the odor is not that of any one cooking spice, it is easy to imagine it as a component of gingerbread. The Swamp Azalea is still found in quantity on Long Island. Although the flowers are small and inconspicuous, masses of azaleas in the summer sun are quite special for the late-blooming and the perfumed air. Our blooming time is late July.

R. viscosum var. *aemulans*. Plants of this earlier blooming form are from the South. The plant is medium-low, and our blooming time would be June.

R. viscosum var. *oblongifolium*. Until recently this boasted species status. It is a southwestern plant, growing in Texas, Arkansas, Oklahoma. It is often called the Texas Azalea.

R. viscosum var. *montanum*. A low, mountain-top form.

OUR BEAUTIFUL NATIVE AZALEAS - A Slide Talk

(Keynote address by Martha Prince delivered April 30, 1983 at the Fifth National Meeting of the Azalea Society of America in Chevy Chase, Maryland)

Thank you, Jerry. I am very much honored to be invited to speak to you. I did not know, however, that Fred Galle would be present! I will be showing several of his azaleas. I wrote to Fred a few weeks ago; here is his reply. "Wish I could be at the meeting. I don't have the dates free, however, as I must be at the University of Alabama, to make a speech at the Botanical Garden." He sent me three slides, which I will show you. In the interest of fairness, I think Fred should now give the talk on my slides, don't you?

I have tried to anticipate what I think may be your questions. When I spoke to Bill Miller he said that what he most wanted was a way to tell the native azaleas apart. I assume he means when the plants are in bloom. So, I tried my best to make a tabulation of the characteristics; the sheets I have passed out (Table 1) are as accurate as I can make them.

The trouble is, as Fred knows only too well, the bees get into our azaleas and cause all kinds of confusion. Taxonomists are not happy with the results. Please look

Table 1
A MORE-OR-LESS GUIDE TO SUBSERIES LUTEUM IDENTIFICATION
(Eastern U.S. only)

	Color	Tube Glandular	Stolon- iferous	Fragrant	Range	Growth Habit	Bloom Time (native)	Bloom Time for Long Island, N.Y.
AUSTRINUM Florida Azalea	yellow	X	?	X	No. Fla., south Ga., Gulf Coast	Tall	End of March	May 25
CANESCENS Piedmont	white, pink	X	no	X	All Deep South	6'-10'	End of March to April	May 15
NUDIFLORUM Pinxterbloom	pink	no	X	X	North Ga. to New Eng.	6'-10'	May-June	May 10-20
ROSEUM Roseshell	pink	X	no	X	N. Carolina to New Eng.	6'-10'	May-June	May 15
SPECIOSUM Oconee	orange to red	no	?	no	S.E. Georgia	to 6'	mid-April	May 15
CALENDULACEUM Flame Azalea	yellow to orange to red	X	no	no	Georgia in mountains to Pa.	to 15'	May 10-June 20	June 1-15
BAKERI Cumberland	orange to red	X	X	no	N. Ga. to Kentucky	5'-6'	Late June-July 10	June 25-July 1
PRUNIFOLIUM Plumleaf	shades of red	X	no	no	Small area, Ala. & Ga.	tall	July-Sept.	July 5-mid Sept.
ALABAMENSE Alabama	white, yellow blotch	X	X	Lemon	Small area, Ala. & Ga.	3'-6'	Mid-April	May 25
ATLANTICUM Coastal	white, tinged pink	X	very	X	S.C. to Delaware	to 3'	Late April- late May	May 25
ARBORESCENS Sweet	white, tinged pink, red style	X	no	Helio- trope	Ga. moun- tains, north	5'-12'	late May-July 1	late June
VISCOSUM Swamp	white	X	X	Spice	Georgia to New York	3' (var. montanum) to 12'	July 1	July 1 and later
SERRULATUM Hammock- sweet	white	X	?	Spice	No. Fla., So. Ga., Gulf Coast	Tall	July 1 onward	July 1 onward

This is only a general guide; there is so much natural crossing that color, glandularity, and stoloniferousness all vary.

PLANT SOURCES:

Beasley's Transplant Nursery
Parkertown Rd. Lavonia, Ga. 30553

Salter Tree Farm
Rt. 2, Box 1332, Madison, Fla. 32340

Bovees Nursery 1737 S.W. Coronado
Portland, Ore. 97219

at the table first; you can check for questions you may still want to ask. I will show you the various species in as clear - or as "pure" - forms as I have photographs of, but I warn you that there are many natural crosses, many intergrades. The information on the sheet is only a rough basis for classification, but I hope it will be helpful when you find azaleas in the wild or in gardens.

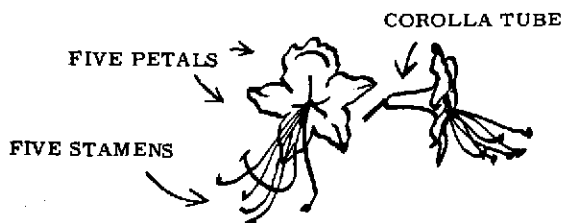
Slides, please.

My title slide is of a natural hybrid [SLIDE: pink and yellow azalea] I will not discuss at this point. The next slide was taken at Callaway Gardens. [SLIDE: Pond, woods, with yellow, white, and pink azaleas] I want to show you a few pictures of pretty "azalea scenery" before I try to be instructive! The yellow plants are *austrinum*, and both the pink and white are *canescens*. Lovely.

Now I will be a little "technical", as Bill requested. Azaleas are, as you know, in the genus *Rhododendron*. [SLIDE: Diagram for series] (Chart 1). I will use the English, or Hutchison, system, not the Rehder. Your **AZALEAN** lists "subgenus *Anthodendron*," as in Rehder. Rehder does not use the word "azalea" at all; I follow Hutchison, and use series *Azalea*, instead. Below the series comes six subseries (sections, in Rehder). In

Series Azalea

Subseries *Luteum* -----



Subseries *Canadense* -----

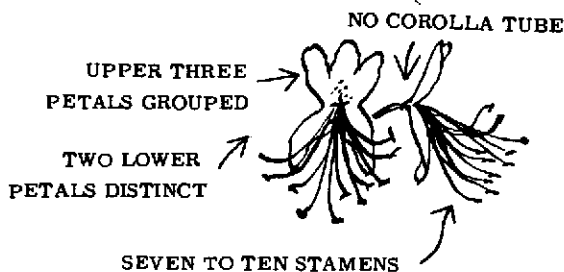


Chart 1: Native american azalea subspecies

America, we have examples of two of them, both deciduous (losing their leaves in winter). Subseries *Luteum* is the one of which we have the most - fourteen, fifteen, or sixteen species (refer to the descriptions of the native

species preceding this text, ed.), depending on the taxonomist to whom you are speaking. We have most of the world's species in this group; *Luteum*, itself, the species for which the subseries is named, grows in the Caucasus - Black Sea area. *Molle* is a native of China and *japonicum* of Japan. We have two species in the *Canadense* subseries, but I will discuss those later.

First, I will go through our azaleas in the *Luteum* subseries. You will notice, on the diagram on the screen (Chart 1), that there is a very distinct tube behind the corolla. There are five distinct and separate petals (or lobes), of which the upper tends to be the larger or wider. Note the five stamens.

I am not going to present the species in any taxonomic order. One **could** approach them that way, or alphabetically, or by blooming time, or whatever. As Bill requested help in identification, I will show them in "confuseable groups" - groups in which one azalea could be mistaken for another. My first species, however, is easy to identify. . . nothing else looks like it. [SLIDE: A clear yellow *austrinum* truss] This is *austrinum* and a typical picture. The long-tubed flowers swoop down in a very distinctive way from the center. *Austrinum* is very early; at Callaway, you will find it at the end of March. In our New York garden, bloom-time is the fifteenth of May. On the handout sheet (Table 1) two blooming dates are listed for each species - one for native locale and one for Long Island, New York. For possible use in your own garden you will need to adjust the dates by hundreds of miles, or by altitude, or both.

The first *austrinum* was the "purest" form, clear yellow. Next, a bee (some years past) must have mixed things up just a tiny bit, and gave this *austrinum* a touch of pink from *canescens* [SLIDE: Reddish tube on an otherwise yellow flower] This is, however, still definitely *austrinum*, and the reddish tube is quite a usual occurrence. Now, I will show you one of the most interesting clues to use in identifying species - the glands, or lack of them, on the corolla tube (Chart 2). [SLIDE: Closeup of portion of tube - yellow, with red glands] See those small, round "blobs"? These are the glands, sticky little things. They are small balls of liquid. You actually don't need this clue for identifying *austrinum*, but I want to show you a good and pretty example. In the field, I use a times-eight hand magnifier. With it, wonderful things



Chart 2: Glandular and aglandular tubes.

smooth. Remember that *Arborescens* is called Smooth azalea.

The confuseable species here is *viscosum*, the Swamp azalea. It does grow on wet ground - almost in streams, sometimes - but is quite at home in the mountains. The first slide will be the new-growth leaf stem [SLIDE] so you can compare it to the *arborescens* you just saw. Note the hairs on the stem, quite unlike the *arborescens*. The tube of the corolla is glandular [SLIDE: tube closeup], even more glandular than the one on *arborescens*. Notice how the glands go up the center-back of the petals. *Viscosum* is so sticky it is unpleasant to the touch. The petals will glue back if you fold them. Yes, I will show you the flowers! Here are some nice ones; we were walking in the mountain woods, through a two or three foot high "sea" of green leaves sprinkled with white stars. [SLIDE] These are variety *montanum*, which is probably the best form. The ten-foot high plants that grow on Long Island are rather straggly. *Viscosum* fragrance is spicy, as though it belonged in spice cake or gingerbread.

Viscosum has a very close relative further south; you could never find these together naturally, but you might very easily mistake them in a garden. This is the Hammocksweet azalea, *serrulatum*. [SLIDE: long-tubed white flowers] Here is a good use for the hand magnifier. [SLIDE: closeup of corolla tube with glandular setae] These tubes, to me, are the prettiest of all. They remind me of stalactites in a snow queen's palace.

I am leaving out two azaleas in the *Luteum* subseries, which may or may not have permanent species status: *oblongifolium* and *coryi*, both from Texas. I'm afraid my interest, even in azaleas, does not include exploring there. Both are supposed to be very similar to *viscosum*, and not of any exceptional value for the garden.

QUESTION: For what purpose are the glands you have shown us? ANSWER: I don't know. Fred? FRED GALLE: Glands attract insects. MARTHA PRINCE: I wonder why nature wanted insects where they do no good.

For the last of the *Luteum* subseries in America, we take a cross-country jump, to see *occidentale*, the Western azalea. There were first intensively studied by Leonard Frisbie and are now the special province of Britt Smith and Frank Mossman. Frank sent me this picture. [SLIDE: California scene, hillside covered with azaleas] That is the Pacific, in the distance, and a fresh water pond. *Occidentale* grows in the Pacific northwest and part of California. I will show you some beautiful flowers, but you probably cannot grow them. I can't. Eat your heart out!

Occidentale is more than tetraploid, and may have the most interesting variety of form, if not of color. Fred, do you know the chromosome count? FRED GALLE: Some are hexaploid, though some are only diploid. Look at the ruffling on this flower. [SLIDE: azalea 'Stagecoach Frills'] Isn't that fabulous? It's a dwarf and commercially available. Here is another beauty. [SLIDE: 'Stagecoach

Peppermint'] Here are more. [SLIDES: SM 605, SM 414, SM 20, SM 604, SM 28, SM 308] The "typical" color may be white with a yellow blotch, but you see the pinks, doubles, striped ones, et cetera. . .

I wouldn't say not to try them. We try, and try, and try! They need a lot of moisture, probably including mist. The one person I know on Long Island who who has any success uses epsom salts around the plants, too. We haven't tried that. Now I only hope to carry some to blooming in the greenhouse, so we can use the pollen for hybridizing.

Incidentally, I have some catalogues on the table for you. These are places that I know, three good nurseries, with good sturdy plants and rather reasonable prices. You will find these *occidentale* in one of them, not all of the plants, but most of them.

We have now covered all the *Luteum* subseries azaleas. America has two species in the *Canadense* subseries; one grows in North Carolina and one in New England. This slide is of *vaseyi*, which grows only in the Balsam mountains of North Carolina. [SLIDE: pink blossom] The three upper petals are grouped, and the two lower ones flare out separately. [SLIDE: Chart 1.] *Canadense* azaleas have seven and ten stamens. *Vaseyi* has seven. The shape is very distinctive; this you really cannot mistake. It resembles *schlippenbachi*, though it is smaller, and "schlippis" don't grow in the Carolina forest! [SLIDES: close-up] Note the cut in between the three petals and the two; it is all the way back to the calyx. This pink one, the usual color, has lovely "paprika" dots. Pretty.

Here we have 'White Find', a white *vaseyi*. [SLIDE] If the pink was sprinkled with paprika, these dots must be chives. 'White Find,' a LeBars introduction, does not seem to be commercially available anymore. If you are a member of the Rhododendron Species Foundation, you can order it from them. Ours we grew from cuttings. Perhaps you can find someone who can let you have a few cuttings. It is not as difficult to root as are many of the deciduous azaleas. [SLIDE: several sprays of white] I think it is one of the loveliest garden shrubs.

Next we fly up to Maine. This is species *canadense*. This azalea grows in much of New England, but our favorite spot for it is Mount Desert Island, on the coast. [SLIDE: hillside of azaleas, with rocks; mountains in the back] The common name for *canadense* is Rhodora. You find Rhodora mentioned in many New England poems; "If eyes were meant for seeing, then Beauty is its own excuse for being." [SLIDES: various shades of lavender pink] Many people dismiss Rhodora as having a poor color. I disagree--any color in nature can be lovely in its proper home. I admit that it is often rather straggly as a plant; you wouldn't want it as a single specimen. Here around Washington you cannot grow it, anyway. We can't on Long Island. The species is not adapted to hot weather.

If you examine the flower [SLIDE: close-up] you see that the petals are grouped, as in *vaseyi*, but here the

three upper petals are actually joined to within a quarter inch of the tips. Here is a nice color. [SLIDE: deep pink, growing in the rock] *Rhodora* grows in crevices like this, where it can be less than a foot in height, or [SLIDE] it grows in bogs, where it may reach three feet in height. This picture was not only taken in a bog, it was taken in the rain. . . in such situations, Jordan [Mr. Prince, ed.] holds an umbrella over the plant, and I put my slicker over the camera and my head. Jordan is dry in his raincoat, the flowers are covered, the camera is covered, and most of me is soaking wet!

Here is the rather rare white form. [SLIDE: white flowers] The flowers are past prime, but it was the only white we saw. The white *Rhodora* blooms about a week earlier than the pink (which is also true of the white *vaseyi*). In Maine, azalea time is June 1 or thereabouts. I know it is hard to count stamens on a photograph, but I can assure you that there are ten.

That is the complete set of native America azaleas.

Now that you have the species neatly in order, I intend to mix you up! As bees are numerous, and as different species often grow in one locale, interesting things happen. Around a stand of red *bakeri*, for instance, may be a varying assortment of pink hybrids with *arborescens*. Fred would call these a swarm. I will show you some natural hybrids and some deliberate ones.

First, here is an interesting *austrinum*. [SLIDE: yellow blossoms, striped white] Floyd McConnell of Mobile found this mutant; he has named it 'Millie Mac'. As though that were not enough, 'Millie Mac' sported this, which Floyd calls 'Mike' [SLIDE: white petals, blotched yellow]

Those of you in ARS all know David Leach and his book **Rhododendrons of the World**. Dave sent me these pictures. This first is pure *bakeri*, a form he has named 'Scarlet Salute.' [SLIDE: fine red] Dave's azaleas are commercially available through Bovee's. When David hybridizes, he does so to obtain late bloom. His Madison group blooms in Ohio in mid-June, and his Lake County group in mid-July. Here is 'Cream Puff' [SLIDE: creamy yellow flowers], a floriferous and fragrant one, *bakeri* by *arborescens*. And now *prunifolium* crossed with 'Cream Puff.' [SLIDE: pink and yellow] Next, *prunifolium* x 'Scarlet Salute.' [SLIDE: red] Dave photographed this on July 6. [SLIDES: several other attractive late blooming crosses] For a final Leach slide, here is 'July Jester.' [SLIDE: red plant completely covered with bloom] The cross is *prunifolium* x 'Scarlet Salute.'

Here now are two *prunifolium* x *arborescens*, crossed by Fred Galle, raised from seed by Sid Burns - and the photographs are mine. [SLIDES: one pink, one cream with red filaments] I took these pictures on July 6.

I have a friend in Georgia who specializes in native azaleas and crosses of them - George Beasley in Lavo-
nia. This is 'Red Velvet' [SLIDE: a very lovely red] which I haven't yet seen. George says it is fragrant, so it has to be either *bakeri* or *calendulaceum* by *arborescens*. I

would have guessed *calendulaceum*, but George thinks it is *bakeri*. George found it on a mountainside we both like. He took four or five cuttings, but when he came again the plant had been run over by a jeep and was dead. The plant no longer exists, but the few cuttings took, and they **will** be on the market soon. Here is one of George's *bakeri* x *arborescens*. [SLIDE: pink with white tube and strong bud contrast] His 'Peaches and cream' is nice. [SLIDE: pink-edged petals] This cross is *viscosum* var. *montanum* x *bakeri*. Next are three doubles which he has not yet succeeded in propagating. Here is a double *speciosum*, probably with a good admixture of *canescens*. [SLIDE: pink and white double] George promises to keep at it until he succeeds! [SLIDE: Two other doubles] Note that there is only a stigma and style - the stamens are petaloid. I have already put my order in!

Most of you grow some of Polly Hill's North Tisbury's. . . Polly helped publicize some natives known as Choptanks. They are *atlanticum*, with a bit of *roseum* or *nudiflorum*. This group was discovered many years ago on the upper Choptank River, over on the Delmarva peninsula. This is one that George sells-as Choptank C-1 [SLIDE: pink-tubed white] Polly sent me some cuttings in the mail a few years ago, and though I wasn't expecting them, and stuck them after a delay, they all "took." They are a very easy plant to grow. Incidentally, my characteristics chart (Table 1) gives "very" under "Stononiferous"; that is exactly right - **very**. One plant has been known to spread for an acre.

The last plant of George's I will show you is 'My Mary.' [SLIDE: a nice pale yellow] This is *austrinum* x Choptank, and is George's favorite, which he named for his favorite wife. Wayside sells it.

I have a few slides from Dr. Schroeder, who I believe is a member of ASA. FROM AUDIENCE: Yes, he is President of our Tri-State Chapter. Dr. Schroeder lives in Indiana and breeds for hardiness and lateness. This is (*prunifolium* x *arborescens*) x *arborescens*, and blooms in October. Now a September-blooming white, *serrulatum* x *arborescens*. He also has some almost maroon crosses.

Finally, from Fred. This [SLIDE: pale yellow with pink tubes] *austrinum* x *atlanticum* is not yet named, but Fred says it will be. And now 'Galle's Choice,' - *calendulaceum* by *alabamense*. [SLIDE: cream flowers] Nice.

All these crosses may suggest interesting possibilities to you, if you like hybridizing. People have asked me, "What would **you** like to have?" I have thought for example, that it would be nice to have a good yellow with a lemon scent, perhaps that could be gotten by crossing *alabamense* with *austrinum*. What would **you** like?

The first slide I showed this evening was a clear yellow *austrinum*, which I said could not be confused with anything else. For my last slide, here is another *austrinum*. Just look! [SLIDE: brilliant red-orange] Fred showed this picture at our New York ARS meeting last year, and I was flabbergasted. A bee must have added some *canescens* here, but it is still a startling color for

austrinum. You can't really know your native azaleas even after years of looking! You **can** have a wonderful time exploring.

With that, we go back to the lovely mountains and say "Goodnight". [SLIDE: dusk, with dark blue hills and a sunset sky]

Thank you.

Martha Prince is a resident of Long Island, N.Y. and has published many articles dealing with native azaleas and azalea gardens.

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THE AZALEAN concurs with the author that azaleas belong to *Rhododendron* series (subgenera) *Azalea*. Series *Azalea* is considered by some to be equivalent to subgenus *Anthodendron* and can be further divided into six subseries or sections that include the deciduous native American azaleas in the subseries *Luteum* and *Canadense*. This is the classification presented in the second edition of **The Azalea Book** (1965).

Individuals interested in the identification and history of native American azaleas may also wish to consult, Galle, F. C., "Identification of Native Azaleas." **Quar. Bull. Amer. Rhod. Soc.**, 27: 138-145 (1973) and Mossman, F. D., "Species Rhododendrons Before 1850. Discovery, Introduction, and Classification." **Quar. Bull. Amer. Rhod. Soc.**, 29: 70-77 (1975).

REFLECTIONS ON BEN MORRISON AND HIS AZALEAS

(an address delivered April 29, 1983 at the opening of the Fifth National Meeting of the Azalea Society of America in Chevy Chase, Maryland)

Dr. Arthur W. Frazer
Alexandria, Virginia

Dear Friends and "Woolite® Lovers": Two weeks ago, our nursery was besieged by phone calls from frantic azalea growers asking if it was true that you should spray your plants with Woolite® to protect them from being frozen. This amazing announcement had come over a local radio station. Since then, I have come upon another rumor that if you spray your plants with Woolite® heavily, then it acts as a dog deterrent because the puppydogs who come over to piddle on your plant get a whiff of the Woolite® and it reminds them of bath time and they run away and hide. But the most feared of the rumors that have come to my attention, is that Woolite® is an excellent detergent for washing lingerie and woollens. I'll buy that. Well, it just goes to show that if you listen long enough, you are liable to hear most anything.

I am amazed at the technology of this podium where I am standing. It has a little light on it and over here to the right, something that puzzled me for a minute. It's a dial. You turn the dial, and when your time is up, a red light comes on. Now, I'm used to the old vaudeville hook, where they pull you out when they've had enough of you. Now, there's only two hours and a half on this timer, so perhaps I'm a little safe. But, I am going to set the timer just for kicks because I have never been the victim of such technology before.

It has been said that a prophet is not without honor save in his own country. So it was with Ben Morrison, a man who worked for twenty-five years for the Department of Agriculture, yet wasn't officially honored until a few years after his retirement when the Ben Morrison Gardens were dedicated (with Morrison present) in May 1954, and finally in 1968, at the first memorial lecture given by Mrs. Ladybird Johnson for Ben Morrison. By the way, the Department of Agriculture, actually the Arboretum, searched out an azalea which they called 'Mrs. LBJ' to honor her on the occasion of this lecture. And then, something of an afterthought, they thought they'd better dig up something for old Ben. So they went to the Plant Introduction Station at Glenn Dale, Maryland, and there in the corner where some of his early Glenn Dale seedlings still existed, there was a plant. Incidentally, it had a tag on it marked "special". Nobody knew what "special" meant, but they decided they would take this and call it 'Ben Morrison'. Dr. Bill Ackerman, a very knowledgeable gentlemen at the Arboretum, who is spending most of his time trying to develop a breed of hardy camellias in case all you frustrated camellia lovers might want to know, confirms that this plant was pulled out from some of the Ben Morrison's plants that were still at the Plant Introduction Station. I

personally suspect that it may be a sibling, a sister plant, to 'Surprise', and those of you who are familiar with 'Surprise' know that it is somewhat difficult to tell the difference unless you have them side by side. 'Ben Morrison' is a little bit more garish in its coloring. I'll show you a slide later on. Incidentally, the variety named 'Ben Morrison' is not to be confused with another variety 'B.Y. Morrison' named several years earlier by Henry J. Hohman of Kingsville Nursery. Mr. Hohman was internationally-known for his specialization in exotic or rare horticultural forms—mostly conifers and hollies.

Back to the neglect of recognition of Ben Morrison. He was never honored by the American Rhododendron Society. They give out medals right and left, but never a medal during his lifetime or posthumously to Ben Morrison, and yet he developed more azaleas than all the other azalea breeders in the United States put together—over 500 named varieties: four hundred and fifty-four of the Glenn Dales, and 57 Back Acres which he developed and named at Pass Christian, Mississippi, after his retirement.¹

Perhaps one reason why he was never officially recognized by the ARS was his close association with Great Britain's Royal Horticultural Society. Also judging from some of his correspondence I have seen, Ben Morrison thought that the ARS was (1) largely localized, and indeed it was in the beginning on the West Coast, and (2) was heavily involved in rhododendrons and not so involved in azaleas. Moreover, at the time that he registered his azaleas, there was no registration mechanism in the American Rhododendron Society, and so he registered all his new azaleas with the Royal Horticultural Society of Great Britain. In recognition of his accomplishments, he served as Vice-President of that Society for over 20 years.

Ben Morrison affected his contemporaries in different ways. He was loved, admired, and revered, and he was disliked and criticized. Just like the two men who look at an elephant from different ends and it doesn't seem to be the same creature, I think this was true with Ben Morrison. But to most, he was a very human being who loved people, but he expected from them the same level of competence and diligence that he himself applied. And this didn't always happen, human nature being what it is.

¹Ben Morrison registered 12 Back Acres varieties with the Royal Horticultural Society in 1964 and another 41 varieties in 1965. During 1965 he selected and tagged four additional varieties in his garden before his untimely death in January 1966.

He was a man of many talents, as I am sure you have heard before. He was a professional vocal singer in the Washington area, taught voice, and he was a pianist. When he left Washington, he took his own piano with him down to Pass Christian, Mississippi, and when he couldn't get it in the house, he gave it to the local church. He was one of the early members of the newly formed American Horticultural Society, and he served as its president from 1936 to 1940. In addition, he was for thirty-seven years the editor of the American Horticultural Society magazine beginning in 1926, until shortly before he died. He was an amateur artist; he did linoleum block cuts, many of them for the magazine. He was a prolific breeder of iris and of daffodils, winning gold medals from several societies. Yet he spent most of his busy life, and most of his life in Washington, by the way, breeding azaleas.

Ben Morrison began his eventually consummate interest in azalea breeding in the 1920's. In 1920 he joined the Department of Agriculture as a horticulturist at the Plant Exploration and Introduction Station, having come from New York where he had practiced landscape architecture for a couple of years. (He was a landscape architect by training and had a degree in landscape architecture from Harvard—training which was valuable in his early visualization of the newly established National Arboretum.)

It was rather natural that this new job would pique his interest. Ben Morrison originally was from Atlanta, Georgia, and was always enamoured of the large flowering, spectacular azaleas of the South, what we know as the Southern Indian azaleas, which are not hardy here further north. The only group which was hardy here was the Kurumes, the small flowered azaleas that bloomed around April 15th. As plants began to come in from the U.S. explorers in the Orient—Japan and Korea, he saw the azaleas among them as plants that might offer tremendous possibilities for breeding azaleas that would bear large flowers and would be hardy in the Washington area and beyond. The Satsukis, as we know them now, were so named because in Japan, where they originated, they flowered in the "fifth month". Most of the Satsukis were rather hardy, at least in the Washington climate, and so he crossed several of them with U.S. hybrids, including especially 'Vittata Fortunei,' which was one of his favorites because of its hardiness and its variegated blossoms.

He began his project in his backyard. Actually, it was his parents' backyard. He was living with his folks in Takoma Park, Maryland, at the time, and when things got pretty far along and after encumbering a few other backyards in the neighborhood with his seedlings, he moved them to the Plant Exploration and Introduction Station in Glenn Dale. But along came a new boss who said get rid of those things; get them out of here. So, he picked up what he had done and what he had been doing since then and took them back to Takoma Park on a two-acre plot and continued his project there. Fortu-

nately, his chief didn't last too long, and the successor saw what Ben Morrison was trying to do and gave him permission to bring his seedlings back and gave him a staff to assist him.

He introduced his first azaleas in 1939. This was more than 15 years after he first began hybridizing his "new azaleas." He introduced a few more in 1940 and the remainder after the war—454 different Glenn Dale varieties. In the meantime, Ben Morrison had become the Director of the National Arboretum. It is mind-boggling to contemplate that Ben Morrison simultaneously was busy as Chief of the Plant Introduction Station at Glenn Dale (1934-1938); was the first director of the new National Arboretum (1937-1951); was busy selecting and releasing his first Glenn Dales (1939); continued as editor of the American Horticultural Society magazine; and who knows what else! The new National Arboretum was a monumental task itself, because it was at first nothing but overgrown wilderness. One of the first things that he did in his new role as Director was to move all of his Glenn Dale seedlings to the Arboretum. Seedlings are of course, different plants out of the various crossings he had made over a period of 15 years. These seedlings were plants that he felt were too good to throw away but not good enough to name. So he planted them on Mount Hamilton, where they still are now. Seventy-thousand different seedlings - what I am trying to impress you with is that he produced over 70,000 seedlings from which he judged 454 good enough to be named.

I've come to one of my first little knitpicks. There were many of the Glenn Dales and later of the Back Acres that bear the names of women, and some wiseacres have winked their eyes because Ben was a bachelor. Fiddle-faddle! They were mostly wives of men with whom he was professionally associated in one way or another. Caroline Dormon was a writer on fungi and mushrooms who wrote articles for him in the American Horticultural Society magazine. Helen Fox was a herbalist who also wrote for the American Horticultural magazine. 'Miss Jane' was named for his secretary at the Society. Martha Hitchcock was the wife of a colleague of his at the Plant Introduction Station, ditto for Helen Gunning and Helen Close. Louise Dowdle was the wife of another man with whom he was associated at Glenn Dale and later who briefly worked with him at Pass Christian. Rachel Cunningham was the wife of a Standard Oil executive. Leila Stapleton was a lady who lived on the West Coast whom he had never personally met but corresponded with for many years and who never even knew that an azalea was named for her. Corinne Murrah was the past president of the Garden Clubs of America and lived in Memphis, Tennessee, and so on. I recite this to lay to rest the snide references to "Ben Morrison's lady friends". This was his manner of showing gratitude to the very many friends who supported him in his endeavours. But there is one more, Janet Noyes. Those of you who are from the Washington area

and have been here more than a decade, remember the **Evening Star**. It was Janet Noyes' family who were publishers of the **Evening Star**, and Janet Noyes was an influential lady around Washington. When Ben Morrison was moving seedlings to Mount Hamilton at the Arboretum, the National Park Service wanted him to divvy them up so they could plant these shrubs around the parks in Washington, and he refused. And when they insisted, he refused again and again. His logic was that these azaleas were not named varieties and if they were planted in the parks, people would come in and take cuttings from them and grow them as Glenn Dales and he didn't want that. Well, the Park Service got a little hot under the collar and went to his boss, the Secretary of Agriculture, to put a little heat on him. This bothered Ben Morrison greatly. Janet Noyes, being a supporter of the Arboretum and a friend of Ben's, took the battle into her own hands and went up on the Hill. "Up on the Hill," as I am sure you all know, means you go see the Congressmen, and she did, and the request was squelched.

Those of you who are familiar with **Hybrids and Hybridizers**, an otherwise excellent book, can correct this story in the margin. As you recall, Morrison was the Director of the Arboretum from 1937 to 1951. During his tenure, he went to his superiors at the Department of Agriculture and proposed another breeding project of azaleas. They were horrified. They said, no way—he had already created too many new azaleas. Well, Ben was hurt. By this time, the Glenn Dales were beginning to make a real name for themselves. After he retired in 1951, he decided to move down to Pass Christian, Mississippi, to the pecan ranch of a life-long friend of his. As a matter of fact, his friend, Ivan Anderson, had been a landscape architect in Arlington County for a number of years, until he developed consumption, and he went down to his father's pecan ranch to spend his remaining days. He was also a bachelor like Ben, and he invited Ben to come down and live on the ranch, incidentally named "Back Acres," which is how that race of azaleas got its name. Over a period of almost 15 years, he engaged in his new hybridizing program to produce azaleas with bicolor and double flowers. He didn't always succeed, but he did produce a number of doubles and bicolors and in my judgment they are the vintage cultivars of his long and prolific breeding career.

There is a serious problem in making accurate identification among the many Glenn Dale (and Back Acres) varieties, sometimes with subtle differences of color among them. When Ben Morrison began to develop his Glenn Dales, he needed a precise color system to describe the innumerable variations in colors among his azalea blossoms. There was no extensive color system excepting one by an ornithologist, Professor Robert Ridgway who incidentally, was for several years Director of the U.S. Museum of Natural History. Professor Ridgway had published his colorbook in 1912 replete with over 1100 color names and corresponding color chips. The apocryphal tale is that his wife pasted in the

little color chips on each page of each volume of this publication that originally sold for eight dollars. However, the names that Dr. Ridgway used were frequently names that meant more to an ornithologist, and so you've got exotic names like eosine pink, jasper red, chatenay pink, begonia rose, etc. Why is this a problem? Because unless you have access to a copy of Ridgway, you don't know what rose doree means or what mallow purple means. This has understandably led to much confusion and guessing as to what color is being described, and this has caused mislabeling of azalea varieties by less than careful nurseryman. Unfortunately, the problem of precise color identification is compounded, because Ben Morrison continued to use Ridgway color names for his Back Acres—and for all the Satsukis which he described in Fred Lee's **The Azalea Book**.

From that problem, you can go to what I consider the other extreme, illustrated in the book **Hybrids and Hybridizers** where it attempts to describe the colors of the various Back Acres varieties. Most of the named varieties are simply described as pink, orange-pink, rose-pink, or rose-red. Now there are innumerable variations in the colors of these Back Acres flowers. To try to simplify color descriptions is indeed a worthy effort, but to popularize them in worthless generalizations is even worse than doing nothing at all. What we do need, and what I hope somebody will undertake, is a job which will provide meaningful names to people that can translate them in their mind's eye as to what hue, tint, or shade a particular color is. The National Bureau of Standards' "simplified" color system used in the above example, while useful for many purposes, is woefully inadequate for the many nuances of colors found in flowers.

Doubtless, the most satisfactory color system in use today—and probably the standard of the future—is the **Horticultural Colour Chart** by Robert Wilson, first published in 1938 in collaboration with the Royal Horticultural Society. It has been published both as a color book and as a set of color fans. It is available, but frequently out of stock, from the Royal Horticultural Society of Great Britain. For home gardeners, an abbreviated color fan was developed by Miss Dorothy Nickerson and produced by her under the auspices of the American Horticultural Society. Unfortunately, it is not being currently produced.

I must apologize for this lengthy digression into the problems of color descriptions. But it is a vexatious problem. To get matters back to a lighter vein, I hope you won't take offense at an example of my sense of humor that my wife says is going to get me into trouble. I figure that at 70 years of age, if I can't grease the wheels with a little humor now and then, it's a lost cause. Which, reminds me. Mark Twain went to see a sick friend in the hospital, and his friend is pretty sick. And Mark says to him, "George, it looks to me like you have the same complaint that I had about a year ago, and the doctor told me to stop smoking, stop drinking, stop carousing

around, and I did and got well." George said, "Well, Mark, I don't do any of those things." Mark Twain says, "Poor soul, there he was a sinking ship without any ballast to throw overboard."

I am now going to show you color slides of some of Ben Morrison's azaleas. I think it is appropriate that I should show you first the 'Ben Morrison' azalea introduced in 1968 by the Department of Agriculture. It blooms the same time as 'Surprise' in late May and has the same flower pattern, but it's a little stronger flower color (more saturated) than 'Surprise' is. I'm going to run through these rather fast because my timer is beginning to skip around on me. But, if you have a question, don't hesitate to ask.

'Acrobat' blooms in late May; 'Aphrodite' blooms in mid-May; 'Aztec', beautiful bicolor, blooms in early June. 'Ballet Girl' blooms in late April. Please excuse me, I'm like the father who has so many children he can't always remember their names. I have to constantly refer to my cards to remind me of the names of some of the varieties. If I seem to hesitate, I always know that if I really goof, someone down there in front (my wife) is going to correct me, so I have to be on my toes. 'Cinnabar', one of the variegates, blooms in mid-May; 'Commodore', a deep orange-red, blooms in late April; 'Copperman', blooms in late May; 'Cremona' blooms in late May; 'Crinoline', very lovely, has a ruffled edge and a small white eye in the center and blooms in mid-May. 'Dayspring', one of the most popular of the Glenn Dales because it blooms in mid-April; 'Delos', a full double.

Now I am rash enough to wake you up. This I said is a double. Why is it a double? RESPONSE FROM AUDIENCE: The stamens are converted. Exactly right, no stamens. The stamens are transmuted into petals. It has a pistil, but no stamens. 'Dream', a very heavy flowering azalea, blooms in April; 'Fanfare', mid-May; 'Fawn' is something of a variation on 'Martha Hitchcock', it's a smaller flower and has a softer margin and not as strong a color as 'Martha Hitchcock'. 'Festive' and 'Geisha' are very similar, as I am sure many of you know. They both bloom at the same time. 'Geisha' is white with purple stripes whereas 'Festive' has bright red stripes. There is one more difference, 'Festive' has more of a creamy colored background than 'Geisha'. 'Geisha' is more milk white. 'Galathea', one of the darkest of the Glenn Dales; 'Gawain', beautiful. It has a very flat face and exerted stamens. Stamens stick out in front of the flower. I like this particular slide because the pollen on the ends of the stamens seems to be iridescent. I don't have any other slides where the pollen shows as spectacularly as it does here. 'Glacier'—beautiful white on a plant with dense, dark shiny foliage, blooms in early May. 'Gladiator', late April. 'Gorgeous', mid-May. 'Gypsy', a very soft pink, also mid-May. 'Helen Fox', now notice we have 'Ben Morrison', we have 'Surprise', and we have 'Helen Fox', all three varieties have this colored center with irregular white border. They are the only Glenn Dales which have this characteristic. I think it is most unusual.

If you recall the 'Ben Morrison' slide you saw, 'Helen Fox' has a much softer color than 'Ben Morrison'. 'Helen Gunning', a beautiful bicolor, white with pink border, blooms in mid-May, about the same time as 'Martha Hitchcock', or maybe just a bit earlier. 'Kobold', one of the darkest of the Glenn Dale azaleas; 'Martha Hitchcock', white with deep magenta border. The plant, when young, tends to be leggy, but as it gets older it fills out into a nice bushy form. 'Mary Margaret', the only one I know that has a lily form flower. 'Masquerade', very heavily striped and flecked, blooms in mid-May; 'Masterpiece', a beautiful pure pink; 'Moirá', with unusual variegation. 'Moonbeam', another very large white; the flower is over four inches across.

QUESTION: How hardy is it? ANSWER: Very hardy. 'Moonbeam' is perfectly hardy in sections of Long Island, but again we must take into account the effects of microclimate.

'Nobility', beautiful, soft washed, rose purple center, fading towards white on the outside, blooms in late May. 'Oriflamme', some people think it reminds them of 'George L. Taber', which of course is not reliably hardy for us here, but it has a blotch of color fading toward points on the outer edge. 'Pied Piper', strongly striped flower, blooms in mid-May; 'Polar Sea', blooms in mid-May; 'Progress', a strange rascal. For years we had 'Progress' that had a very pronounced white center, then we began getting 'Progress' with just a wee little suggestion of white center. The 'Progress' at the Arboretum is the same as this, so it comes both ways. 'Radiance', very pure color, blooms in late May; 'Refrain', is one of my favorites. I tell people the color reminds me of the old fashioned strawberry ice cream that you can't get anymore. 'Robin Hood'. 'Safrano', beautiful white, very good substance, has thick petals, not affected by heat or rain, like some of the thinner petaled azaleas, blooms late May. 'Sagittarius'—it's one of my favorites. It doesn't bloom until mid-June; has a peach colored flower, although it's not always a profuse bloomer for us, but when it is out of bloom, the dark, small green foliage looks for the world like American boxwood. It doesn't get tall—between two and three feet, but we have specimens in our landscape that get six and one-half to seven feet across. 'Shimmer', another one of the variegates; 'Sonata', milk white with magenta stripes; 'Surprise', now here again, how would you differentiate between 'Surprise' and 'Ben Morrison'? Perhaps there is more white in the border, but the color of 'Ben Morrison' is stronger. It is possible that they are siblings, that is that they are out of the same cross. But no one will ever know for sure. 'Treasure', its uniqueness aside from the fact that it has a lovely pure white color is that when it first comes into bloom, the blotch is pink, a soft pink, and then as the flower matures, the blotch turns into a tan color. Very interesting. 'Vespers', mid-May; 'Welcome', a trumpet shaped flower, bicolor, blooms in late May; and 'Wildfire', which blooms in mid-May.

'Bourbon'—one of the first Back Acres. It has a tale. Ben Morrison and Lehman Tingle were friends for many years. Tingle owned Tingle Nursery near Salisbury, Maryland. When Morrison was ready to release his first Back Acres azaleas (as a matter of fact, 12 of them), he hadn't named them yet. When he sent the group to Lehman Tingle, together with the identifying propagation numbers, he promised to send the names later, which he did. Tingle was getting up in years and with Ben Morrison's big, scrawly handwriting, Tingle thought that Ben had named the plant 'Bourbon'. So, between Ben's bad writing and Tingle's bad eyes, it came out in his catalog as 'Bourbon', and so it continued for two or three years. 'Caroline Dormon', full double, large flower, named for the writer on fungi and mushrooms for the American Horticultural Society magazine. 'Cayenne'—we were talking about a full double, now what is this? Double, single, semi-double? RESPONSE FROM AUDIENCE: Semi-double. Why? RESPONSE FROM AUDIENCE: Only part of the stamens have been transmuted into petals. Right, as a matter of fact, some of the stamens have little half-formed petals attached to them. This is a semi-double and quite properly described as petaloidy. Now, let's go back to **Hybrids and Hybridizers** which described 'Cayenne' as orange-pink! This is an orange-pink? No way, no way! As a matter of fact, Ben called it 'Cayenne' because it approximated the color of cayenne peppers. 'Cora Brandt', beautiful double, small flower. 'Corinne Murrah', named for the lady down in Tennessee, a very soft pink with white center. All the Back Acres were bred to be late blooming and nearly all of them bloom in late May, with a couple of exceptions. All are relatively low growing, around two feet or slightly more at maturity. 'Elise Norfleet', a beautiful bicolor. 'Encore', so named because sometimes it would throw a few additional blooms in the fall. 'Hearth-glow', this slide doesn't do it justice. It's a beautiful deep burnt orange color, full double. 'Ivan Anderson' was named after his friend who moved down to the pecan ranch in Pass Christian, Mississippi, to spend his last few days. We were down there three years ago and he was still alive and Ben Morrison had long since been dead (1966), so you never know when your number is going to be called. Ivan Anderson is still alive, or was. (RESPONSE FROM AUDIENCE: He's still alive. I saw him about six months ago. RESPONSE: Still as cranky as ever. ANSWER: Still has a little trouble breathing).

'Malaguena', another double, one of my favorites. 'Margaret Douglas'—by the way, here comes your Ridgway colors "hermosa pink" and "begonia rose". The center is "hermosa pink"—a very slight wash of very pale pink, and the border is "begonia rose". Striking! 'Marian Lee', named in honor of the wife of his friend, Fred Lee, who wrote **The Azalea Book**. I say wrote **The Azalea Book**, but actually, Fred Lee, more accurately, wrote some of the chapters and edited the remainder. All of the descriptions of the Glenn Dales are directly lifted out of Ben Morrison's monograph. In addition, the

descriptions of the Satsukis are Ben Morrison's descriptions translated for him by his Japanese associate. Thus, he was responsible for the descriptions of both the Glenn Dales and the Satsukis listed in Lee's book. 'May Blaine', named for his secretary at the National Arboretum and 'Miss Jane', named for his secretary at the American Horticultural Society. So two secretaries, side by side. 'Phoebe Morrison', a soft purple named for Ben's sister. 'Red Slippers', a vibrant red. 'Saint James' is I think one of the most spectacular of the Back Acres. It has a large star-shaped white center, four rays of white, one running out of each of the petals.

QUESTION: In your experience, is it particularly slow growing? ANSWER: No, I would say not. Sometimes, it is a little slow at throwing the star. It may not throw the star in the first year, but if it doesn't throw it within a couple of seasons, you have the wrong thing. Incidentally I have seen a number of so-called 'Saint James', but wrongly named. Another outstanding characteristic—besides the large white star—is the unusually long and rather narrow leaves of the true variety. 'Saint James' was named for James Harlow, who was for several years, the secretary of the American Horticultural Society and a very close friend of Ben's. The last I knew, about five years ago, he was still alive and living just outside of Charlottesville, Virginia. Does anybody know if he is still alive?

'Starfire', 'Target', has just a small white eye in the center. 'Tharon Perkins', named for the wife of Milo Perkins, a Washington diplomat.

Thank you very much. It has been a pleasure talking with you.

Arthur W. Frazer, Ph.D., is a retired economist, member of the Northern Virginia chapter, and owner-operator of a nursery in Alexandria, Virginia.

THE GLENN DALE PRESERVATION PROGRAM OF THE AZALEA SOCIETY OF AMERICA AT THE USDA PLANT INTRODUCTION STATION IN GLENN DALE, MARYLAND

August A. Dietz IV and William C. Miller III
Silver Spring and Bethesda, Maryland

Members attending the Fifth ASA National Meeting visited the Plant Introduction Station of the U.S. Department of Agriculture (USDA) at Glenn Dale, Maryland, on Saturday April 30, 1983. The group was met and welcomed by Dr. Bruce Parlman, the acting location leader, who briefly explained the functions and responsibilities of the Station and showed examples of "tissue culture", a technique being utilized in one of the ongoing projects at Glenn Dale. The tour proceeded to the Azalea Test Area and Collection site to view the area where the ASA is actively pursuing its Glenn Dale Preservation Program, which involves restoring the original Azalea Test Area and developing a collection of azalea hybrid groups.

MISSION AND FUNCTION OF THE GLENN DALE STATION

The Glenn Dale Plant Introduction Station built in 1920, is located sixteen miles northeast of Washington, D.C., and serves as a major focus in the United States Department of Agriculture's program to locate, identify, and acquire new varieties of plant material. The Glenn Dale Station is part of the USDA Agricultural Research Service officially located at the larger Beltsville, Maryland, Agricultural Research Center and falls within the auspices of the Plant Genetics and Germplasm Institute. Covering some 70 acres, the Glenn Dale Station consists of offices, laboratories for horticulture, plant breeding, and plant pathology research, seed archives, cold rooms, tissue culture transfer rooms, and 34,000 square feet of greenhouse space, one-third of which is specially constructed for plant quarantine purposes.

Glenn Dale is one of several USDA facilities charged with the introduction of new germplasm (seeds, tubers, bulbs, cuttings, and plants) into the country for the purpose of enriching the genetic/phenotypic varieties available to plant breeders, horticulturists, and agronomists. It provides quarantine facilities until such time as newly introduced material is shown to be free from plant pests, especially insects, bacteria, and viruses. For certain genotypes it performs preliminary evaluations to determine the potential usefulness of new material, and it propagates and distributes new plant germplasm to public and commercial researchers, nurseries, cooperators, and specialists.

Research programs at the Glenn Dale Station include breeding programs to develop improved cultivars of woody ornamentals, pathology programs to develop better methods of detecting, identifying, isolating, char-

acterizing, and eliminating latent viruses (viruses not detectable by casual observation), and tissue culture and other propagation techniques which make it possible to multiply rare, hard-to-propagate, slow-to-grow and/or extremely valuable plant germplasm. Plant materials sent to Glenn Dale from other countries include fruit crops such as apples, pears, cherries, peaches, and citrus; field crops such as white potatoes, sweet potatoes, cassava (tapioca), and forage grasses; and ornamental crops ranging from crabapples and flowering cherries to amaryllis, willows, roses, chrysanthemums, and carnations.

Comparatively little in the way of everyday food and fiber crops actually originated in the United States, which makes the Station's mission all the more important. The list of food crops native to North America is meager by any standard and includes only crops such as sunflowers, cranberries, blueberries, pecans, and some grapes. Apples, cherries, squash, pumpkins, beans, corn, and cotton for example, were introduced from other parts of the world. The United States has been described as germplasm poor; that is, a "have-not" nation in terms of a natural distribution of crop germplasm. But it was through an early-on recognition of this sparseness and the determination and resolve to address it, that the United States has risen to its current leadership position in agricultural crop production.

The first official federal plant introduction effort began in 1827 when then President John Quincy Adams ordered American Consuls to send home rare plants and seeds. The USDA was created in 1862, a Commissioner of Agriculture was appointed to collect, test, and distribute potentially valuable plant germplasm, and a separate unit for plant exploration and introduction was established. Through the years, this special unit has had many names: the Section of Seed and Plant Introduction, the Office of Seed and Plant Introduction, the Division of Foreign Plant Introduction, the Division of Plant Exploration and Introduction, the New Crops Research Branch, and the Germplasm Resources Laboratory, to name a few. The list of explorers who traveled all over the world in search of germplasm includes among others: Fairchild, Hansen, Swingle, Carleton, Rock, Cook, Meyer, and more recently Creech. Special agent O. F. Cook is remembered for his work in the preparation and periodic issuance of Plant Inventories, a practice which continues today in the publication of an annual catalog of plant introductions. Incidentally, the first recorded accession, Plant Introduction (P.I.) No. 1, is assigned to

Russian cabbage seeds which were received by Professor N. E. Hanson of the Agriculture College of South Dakota in 1898.

In the wake of a number of world disasters like the Irish Potato Blight, and through a series of quarantine acts beginning with the Plant Quarantine Act of 1912 and the Federal Plant Pest Act of 1957, authority was provided to control the introduction of exotic pests, to establish survey and control programs, and to develop pest control mechanisms like the issuance of phytosanitary certificates. Today, additional regulations are found under Title 7, Chapter III of the Code of Federal Regulations. The Plant Introduction Station at Glenn Dale plays a big role in protecting our crops and our environment from many potential disasters of nightmarish proportions.

THE STATION AND THE GLENN DALE AZALEAS

The Glenn Dale Plant Introduction Station has had many success stories with the various food and ornamental crops. Among them are the Bradford pear and a whole host of azaleas which, as a group, bear the station's name, the Glenn Dale azaleas. The official account of the program leading to the development of the Glenn Dale hybrid azaleas is found in a 1953 government publication - USDA Monograph 20 entitled **The Glenn Dale Azaleas** written by B. Y. Morrison (currently reprinted by Theophrastus Publishing, Little Compton, Rhode Island). Insight into the goals, methods, and materials of the work and more importantly descriptions of the 454 selected cultivars are included in the monograph. In its original form, Monograph 20 is something of a collector's item, but regardless of its vintage, it is essential reading for anyone interested in appreciating the Glenn Dale hybrids to the fullest extent. There is a wealth of information contained in the observations found in the introductory passages.

Ben Morrison began hybridizing azaleas at the Glenn Dale Station during the 1920's. With the help of Harry Gunning, Albert Close, and Frank Dowdle over 70,000 seedlings were produced from crosses involving species and cultivars of the subspecies *Obtusum*. The first official distributions were not until 1942, and they continued through the late 40's and into the early 50's. The primary goal of the program was to develop improved, large-flowering, winter-hardy azaleas for the Washington, D.C. area, zones 6, 7, and south, which exhibit the qualities inherent in the Southern Indicas, which, as a general rule do not do well out of the South. Twelve distinct groups of 10-40 plants each are discernable within the Glenn Dale hybrids which differ chiefly in plant habit and period of bloom. In addition to their beauty and relative cold tolerance, the Glenn Dale hybrids fill the bloom gap between the end of the Kurumes and beginning of the *indicums* and Satsukis. In reviewing the records at Glenn Dale, it has been discovered that a number of Glenn Dale hybrids ('Alexandria', 'Aries', 'Barchester', 'Berceuse', 'Candlelight',

'Caress', 'Etna', 'Fenelon', 'Horus', 'Naxos', 'Orpheus', 'Pontiff', 'Romance', and 'Touchstone') were never formally distributed to the horticulture community (Magruder, 1968).

THE GLENN DALE PRESERVATION PROGRAM

It is unfortunate to note that many of the principals involved in the development of the Glenn Dale hybrids have died. With the inevitable changes in federal interest, emphasis, and funding priorities, the passage of time (more than 40 years), and the absence until recently, of an azalea society to spark a renaissance, the Glenn Dale hybrids have become increasingly difficult to find. But the good news is that something is being done about it.

For the past three years, Roger Brown, President of the Ben Morrison chapter, has worked with USDA officials to develop a mutually beneficial program which would permit restoration of the original Glenn Dale Azalea Test Area (approximately five acres) and establishment of a secure germplasm preservation garden (approximately two acres) for named and unnamed azalea cultivars. Over the years, the Azalea Test Area, the site of much of the original azalea work, had become so overgrown that many of the parents and siblings of Morrison's original hybrids were in danger of being lost. After a long series of meetings and contacts with USDA officials, authorization was granted on June 17, 1982, for the Azalea Society of America to begin restoration activities.

During two work sessions in October and November 1982, great progress was made toward restoring the Azalea Test Area to its former splendor. Society members cleaned approximately 60 percent of the original site of weeds, dead limbs, and unwanted saplings. On the administrative side, a committee of three was formed, consisting of the authors and Roger Brown, to create a working document, a structure for the activity. The resulting Concept Proposal has been approved by the Board of Governors of the Azalea Society of America and by USDA officials. Last fall, through the courtesy of Dr. Bruce Parlman, the Committee was permitted the use of a cold frame. A cap was constructed over the cold frame for the protection of the 150 plants donated by Society members that had been received by the Committee. This past summer a small portion of the nearly two acre Azalea Hybrid Group Garden was prepared to receive plants and all of last year's donations were planted, fed, and mulched.

As plants bloom in the Azalea Test Area, the Glenn Dale Preservation Committee will attempt to correctly identify and tag as many plants as possible. In order to expand the program to its full potential, however, we need to acquire through donations, plants to fill in the various azalea groups. Several thousand azaleas can be planted in the two acre Azalea Hybrid Group Garden. USDA introductions in addition to the Glenn Dales, the Beltsville hybrids, the Back Acres, the Yerkes-Pryors,

Robin Hills, and Linwoods will be some of the first groups collected. Eventually **ALL** recognized hybrid azalea groups will be represented. It is the hope of the Committee that through the "Program" we will be able to preserve the rich heritage of the past and the wealth of the present by obtaining complete collections of the old standards and the new introductions while they are still available.

DONATION OF PLANTS TO THE PRESERVATION PROGRAM

For those members who wish to donate plants to the project the criteria which must be met are:

1) There must be **POSITIVE** identification of each plant, marked with a legible and durable label. If you are absolutely positive, the Glenn Dale Preservation Committee will accept the azalea, plant it, and verify the plant against its written description. If the plant turns out to be mislabeled, it will be donated to the plant sale at a National Meeting of the Society. If you are not **ABSOLUTELY** positive about the identification of the plant, **KEEP IT! DO NOT SUBMIT IT!**

2) The donated azalea **MUST** be in **GOOD** condition, free of insects and disease, and at least two years old so that it will survive the Washington, D.C. area winters where temperatures can go below 0 degrees Fahrenheit and frequently reach 5-10 degrees above zero.

3) Planting will be done in the fall (late September through November) and spring (April through June). **PLEASE** submit a list of the plants that you wish to donate **PRIOR** to the planting season. This will allow the Committee to process the paperwork and arrange to receive or pickup the plants.

At this time the Committee is particularly looking for Glenn Dale azaleas but will take any plant from any group as long as it meets the above criteria.

As the project continues to grow, the Glenn Dale Preservation Committee needs participation from a number of groups within the Society:

1) additional **administrative** representatives from local chapters. The Committee should have at **least** two representatives from each of the local chapters since this is a National project;

2) activation of various study groups, especially the Glenn Dale group, in order to confirm identifications during bloom time, to rate plants as to hardiness, plant habit, etc.;

3) participation from **all** members of **all** chapters. This is a National project which requires the support of the entire membership of the Society. Members are needed to continue cleaning the azalea area, to plant acquired plants, to donate plants, and if possible, to contribute funds to help in the preservation effort.

If you have any questions or wish information regarding the Glenn Dale Preservation Program contact:

Mr. Roger Brown
6209 85th Place
New Carrollton, Maryland 20784
(301) 577-7509

Suggested additional reading pertaining to plant introduction and quarantine and the development of the Glenn Dale hybrid group of azaleas:

1. Lee, F. P., **The Azalea Book**, 2nd Edition. D. Van Nostrand Co., Inc., Princeton, N.J. (1965). Reprinted by Theophrastus Pub., Little Compton, Rhode Island.
2. Lee, F. P., "B. Y. Morrison and His Azaleas." **Quar. Bull. Amer. Rhod. Soc.**, 22: 66-71 (1968).
3. Magruder, R., "Studies on Glenn Dale Azaleas at the National Arboretum." **Quar. Bull. Amer. Rhod. Soc.**, 22: 207-210 (1968).
4. Morrison, B. Y., **The Glenn Dale Azaleas**, Monograph No. 20, U.S. Department of Agriculture, U.S. Government Printing Office (1953).
5. Waterworth, H. E. and White, G. A., "Plant Introductions and Quarantine: The Need for Both." **Plant Diseases**, 66: 87-90 (1982).

August A. Dietz IV is the greenhouse manager for the Smithsonian Institution in Washington, D.C., and is chairman of Resource Development for the Brookside Gardens chapter. William C. Miller III is a program analyst with the National Institute on Aging of the National Institutes of Health, Bethesda, Maryland, and is president of the Brookside Gardens chapter.

EVOLUTION OF A PUBLIC GARDEN WITH EMPHASIS ON AZALEAS

(an address delivered May 1, 1983 at the Fifth National Meeting
of the Azalea Society of America held in Chevy Chase, Maryland)

James A. Dove, Jr.
Edgewater, Maryland

London Town Public House and Gardens in Edgewater, Maryland is a National Historic Landmark maintained by Anne Arundel County, Maryland. London Town Gardens occupies eleven acres of undulating terrain adjoining the Public House (an inn, c. 1744-1750) which is the only remaining structure on the site of what was once a thriving seaport town of about 100 acres on the southern shore of the South River, seven miles southwest of Annapolis, Maryland. London Town Gardens contains a wide variety of plantings. Native trees, shrubs, and flowers have been given special emphasis in developing the garden.

In 1972, the plantings at London Town Public House and Gardens consisted of mainly Hall's Japanese Honeysuckle and several species of wild grapes and various greenbriers (*Smilax* spp.). Existing trees were generally stunted by the competing vines, but a few large specimens of Willow Oak (*Quercus phellos*) were on several slopes.

During the summer of 1972, all of the undergrowth was removed. The vines were cut with brush axes, and the roots were removed by grubbing hoes. No herbicides were used. Subsequent growth of the vines were continually cut until they were finally eliminated.

The result of the clearing certainly was not what one could call attractive. The slopes were completely void of any growth. The soil varied from heavy clay to sand, all of which was extremely acid (pH 4.0-4.5) and low in organic matter. The soil had to be improved before any planting. Leaves were the cheapest and most abundant organic source. The U.S. Naval Academy donated all the leaves removed from their grounds during the autumns of 1972 and 1973. The leaves were spread to a depth of eighteen to twenty inches during the winter months. Ammonium sulfate was spread over the leaves, speeding their decomposition. In the spring, the resulting humus was worked into the soil by a roto-tiller. The leaves contained relatively high amounts of calcium from continuous yearly application of lime to the lawns at the Naval Academy, and thus even though no additional lime was added to the soil at London Town, the acidity was improved to a moderately acid (pH 5.0-5.5) level, a condition ideal for azaleas, rhododendrons, camellias, etc.

The first azaleas in the Gardens were planted in 1973. These were mainly large, old specimens of Glenn Dale and Kurume hybrids as well as several evergreen and deciduous species. Hybrid groups of azaleas now planted in the Gardens include Glenn Dale, North Tis-

bury, Satsuki, Linwood Hardy, Robin Hill, Kurume, Back Acres, Exbury, Knaphill, and other species and hybrids.

As azaleas are essentially "community plants", their health is generally better when planted in mass and associated with other plant genera. Within this community, each plant protects each other from wind and sun, and temperatures, either heat or cold, are somewhat moderated. In heavy, moist soil, some of the ground-cover plants actually improve drainage and soil structure, thus benefiting the azaleas tremendously. As lovely as azaleas are, the many companion plants serve to accentuate their beauty.

The following plants have performed well at London Town and are worthy of incorporating in any azalea planting where they might prove hardy. (Hardiness zones [Z] indicated are the USDA plant hardiness zones.)

Medium Trees 15' - 20'

- Stewartia pseudocamellia* Z-6
- " *koreana* (listed now as
S. pseudocamellia 'Korean Splendor') Z-6
- " *monadelphica* Z-6
- " *sinensis* Z-6
- " *ovata* Z-5
- " *malacodendron* Z-6
- Franklinia alata* Z-6
- Acer palmatum* cvs. Z-6
- Magnolia sinensis* Z-7
- " *sieboldii* Z-6
- " *loebneri* 'Spring Snow' Z-5
- " *stellata* 'Royal Star' Z-5
- " *cylindrica* Z-5
- " *salicifolia* Z-5
- Styrax japonica* Z-5
- " *obassia* Z-6

Tall Trees 20' or more

- Cunninghamia lanceolata* 'Glauca' Z-6b
- Magnolia heptapeta* Z-5
- " *sprengeri* 'Diva' Z-6b
- " *kobus borealis* Z-5
- " *virginiana* var. *australis* Z-6
- Ilex* 'Nellie R. Stevens'
- " *pedunculosa*

Shrubs (*best for hardiness)

Camellia japonica Z-7 (the following survived -7° on January 17, 1982 with less than 25 percent damage).

'Kumasaka'*
'Quercifolia'*
'Eleanor Hagood'
'Promise'
'Gov. Moutan'
'Jarvis Red'*
'Blood of China'

Camellia oleifera Z-6b*

" *sasanqua* 'Maiden's Blush' Z-7b

Osmanthus ilicifolius Z-6b

Mahonia bealei Z-6

" *aquifolium* Z-6

Viburnum japonicum Z-7

" *henryi* Z-7

Calluna vulgaris cvs. Z-5

Erica carnea cvs. Z-6b

Rhododendrons — Dexter hybrids, Gable hybrids are best

Hypericum calycinum

Hydrangea macrophylla 'Mariesii' Z-6b

Deutzia gracilis Z-5

Daphne caucasicum Z-6

" *odora marginata* Z-7b

" *tangutica* Z-7

" *retusa* Z-7

Bulbous plants

Narcissus cvs.

Lilium superbum

" cvs.

Galanthus elwesii (Snowdrop)

" *nivalis regina olgae* (Fall Snowdrop)

Leucojum vernum (Spring Snowflake)

Lycoris squamigera (Autumn Amaryllis)

" *radiata*

Begonia evansiana (Hardy Begonia)

Herbaceous perennials (*Wildflowers)

Saxifraga stolonifera (Strawberry Geranium)

Primula japonica (Japanese Primrose)

" *sieboldii* (Japanese Primrose)

" *polyanthus* (Polyanthus Primrose)

Dicentra spectabilis (Bleeding Heart)

" *eximia** (Fringed Bleeding Heart)

Doronicum caucasicum (Leopardbane)

Ajuga reptans (Bugleweed)

Hosta spp. (Plantain Lily)

Hemerocallis (Daylily)

Paeonia cvs. (Peony)

Asarum spp. * (Wild Ginger)

*Sanguinaria canadensis** (Bloodroot)

Mitchella repens * (Partridgeberry)

Trillium spp. * (Wakerobin)

Ligularia spp. * (Golden Ray)

Epimedium spp. (Barrenwort)

Ferns

Dryopteris erythrosora (Japanese Autumn Fern - one of the most attractive)

" *marginata* (Marginal Shield Fern)

Polystichum acrostichoides (Christmas Fern)

Polypodium vulgare (Common Polypody)

Adiantum pedatum (Northern Maidenhair Fern)

Osmunda cinnamomea (Cinnamon Fern)

There certainly are many more plants that could be listed as good companions for azaleas. The above list contains my favorites. However, there are almost as many plants that are **not** good companions for various reasons. A few of the more noteworthy are as follows:

Acer spp. (Maples) - competitive roots

Quercus phellos (Willow Oak) - competitive roots

" *laurifolia* (Laurel Oak) - competitive roots

" *nigra* (Water Oak) - competitive roots

Juglans nigra (Black Walnut) - toxic roots

Pachysandra terminalis (Japanese Pachysandra) - too competitive

Pteridium aquilinum (Bracken Fern) - too invasive

Onoclea sensibilis (Sensitive Fern) - too invasive

James A. (Tony) Dove, Jr. is the horticulturist for Anne Arundel County, Maryland and at London Town Public House and Gardens, and he is president of the Azalea Society of America.

AZALEA MART



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Dr. Charles H. Evans, editor

Augustus Elmer, Jr., member of the Louisiana chapter and owner of Chinquapin Hill Gardens in Pass Christian, Mississippi where he grew Back Acres azaleas largely derived from Ben Morrison's own plants, suddenly passed away April 1, 1983.

Théuse B. Elmer, his wife, has written Harold Z. Reed of the Brookside Gardens chapter that Donald Landry has taken over the Garden for her.

Augustus Elmer had been shipping cuttings (**THE AZALEAN**, Vol. 3, No. 2, page 10, 1981) from his plants and interested individuals should contact Mr. Donald Landry at P.O. Box 311, Kiln, Mississippi 39556.

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