THE AZALEAN

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AZALEA SOCIETY OF AMERICA

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Dr. Charles H. Evans, Editor

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IN THIS ISSUE:

RESPONSES OF CERTAIN AZALEA CULTIVARS TO PHOTOPERIOD, TEMPERATURE, AND GROWTH-REGULATING CHEMICALS PART 1

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The literature regarding responses of azaleas to different photoperiods is somewhat confusing. The diversity of evergreen azaleas, the interaction of photoperiod with temperature, and possible differences in stage of development when treatments were applied probably account for most of the differences in response. Most of the evidence indicates that, beginning with a vegetative plant, long (18-24 hour) photoperiods tend to maintain vegetative growth and short (8-10 hour) photoperiods generally hasten early flower bud development if temperatures are satisfactory [1,2,4,7,10].

The effect of temperature on flower initiation and early development is more consistent. There may be considerable differences between cultivars in regard to temperature, but in general, warm temperatures are necessary for flower bud development [7,8]. One researcher reported that bud scale formation would take place at 52°F in *Rhododendron simsii* Planch. but that a minimum of 64°F for at least ten hours per day was necessary for flower bud development [3]. Incidentally, temperature is the primary determinant of the latest date for pruning azaleas under outdoor conditions at a given location without preventing flower bud development. After flower buds are well developed, a period of four weeks or more at 33-50°F is generally considered necessary to assure rapid and uniform flowering when the plants are returned to warm temperatures. Temperatures used in this paper will be in °F.

Growth-retarding chemicals have frequently been reported to be conducive to azalea flower bud development, development of multiple flower buds at a stem tip, and sometimes to reduce vegetative bypassing of flower buds. Commercial products that have produced well-documented results are B-Nine and Cycocel [5,6,9]. A-Rest, Bonzi, and Sumagic will probably produce similar results.

My research with environmental and chemical factors affecting growth and flowering of azaleas began in 1968 at Mississippi State University. In an initial test of a wide variety of chemical and environmental treatments, the most interesting finding was the flowering of some 'Alaska' plants when four weeks of short days were followed by four weeks of continuous light at summer temperatures.

A more common response to a sudden shift from an environment that was conducive to normal flower bud development (warm, short photoperiods) to either continuous light or a constant 50° temperature was an interruption of flower bud development and a reverting to abnormal vegetative growth. It was hoped that the multiple shoots resulting would allow such environmental manipulation to substitute for pinching or pruning, but the results were not consistent enough and the process too time consuming.

In a follow-up experiment, plants of cultivars 'Red Wing' and 'Alaska' were pinched November 12 and placed under 18-hour photoperiods at 60° minimum night temperature for five weeks. Then environmental treatments were begun which consisted of either zero, two, four, six, or 12 weeks with 65° minimum temperature and nine-hour photoperiod (short day or SD) followed by either 65° with an 18-hour photoperiod (long day or LD), 50° minimum temperature with SD, or 50° LD for the remainder of a 12-week treatment period. On the same day that the environmental treatments were started, half of the plants of each group were sprayed with a water solution of B-Nine (daminozide) at 3000 ppm active ingredient.

Stem samples inspected eight weeks after treatments began indicated that the number of weeks of 65° SD was the most important factor determining early flower bud development of the terminal bud. All samples with eight weeks of 65° SD and most with six weeks had all flower parts differentiated.

Figure 1 Varied results of interruption of floral development by continuous light.

Figure 2. Experimental setup showing short day bench on left and long day bench on right.

The two cultivars were affected quite differently by treatments in regard to flowering. Continuous SD at either temperature resulted in almost 100% flowering of 'Red Wing' during the 11-week period following the treatment period. With 'Alaska', either B-Nine treatment or at least four weeks of 65° SD was necessary to have 80% of stems flowering during the same period (1).

At the end of the 12-week treatment period, half of the plants of each treatment combination were refrigerated at 45-50° for four weeks and the other half remained in the greenhouse with a 65° minimum temperature and 18-hour photoperiod. After four weeks, all plants were placed in the same greenhouse at 65° with natural (April) daylength.

The reason that half of the plants were left in the greenhouse was that cooler space was not available for all of them. To my surprise, many of these plants began flowering long before the refrigerated plants. The earliest flowering occurred when six weeks of 65° SD were followed by 65° LD. Any exposure to 50° resulted in some delay in flowering. B-Nine treatment also resulted in some delay, but this delay was only four days with six weeks of 65° SD followed by 65° LD. Refrigerated plants did not flower until four weeks later.

Refrigerated plants were not affected as much by previous environmental treatments; however, flowering was poor without at least four weeks of SD or B-Nine treatment. Following at least two weeks of 65° SD, exposure to 50° SD tended to hasten flowering of refrigerated plants, probably because the refrigeration period was shorter than is usually provided. B-Nine did not delay flowering of refrigerated plants.

Predictably, stems of plants that received B-Nine treatment, short photoperiods, or low temperature were shorter than stems from other treatments. 'Red Wing' plants sprayed with B-Nine and grown with 50° SD were extremely compact.

The original intent of this work was to study factors affecting lateral bud development of azaleas, both desirable (branching during vegetative growth and the development of lateral flower buds) and undesirable (vegetative shoots produced before and during forcing).

No lateral vegetative growth of 'Red Wing' took place during the treatment period with continuous 65° SD without B-Nine. The longest growth occurred with B-Nine and continuous 65° LD. With 'Alaska', temperature was almost the sole determinant of lateral growth during the treatment period: little growth took place with 50° minimum temperature except in combination with B-Nine treatment. Growth was less with continuous 65° SD than with any time at 65° LD.

Vegetative growth of 'Red Wing' with continuous 65° SD was still negligible at flowering. With B-Nine, growth increased as number of weeks of 65° LD increased. Growth of 'Alaska' by-passes was over 2" per test shoot with continuous 65° SD and was even greater with all other combinations of temperature and photoperiod. B-Nine did not consistently affect the length of lateral vegetative growth at the time of flowering.

Development of lateral flower buds, otherwise known as multiple budding, at the end of the 12-week treatment period was affected independently by environmental treatments, B-Nine, and cultivars. 'Red Wing' developed about 50% more lateral flower buds than 'Alaska'. B-Nine treatment increased lateral flower bud count from a mean of 0.3 per untreated shoot to 2.0 per treated shoot.

Test shoots on plants with continuous 65° SD, those with six weeks of 65° SD, and those shifted to 50° after four weeks of 65° SD produced very similar numbers of lateral flower buds, averaging 1.2 per stem. Those plants receiving increasing number of weeks of 65° LD developed decreasing numbers of lateral flower buds. With continuous 65° LD, the average number was 0.2 per stem.

At the time of flowering, a count of the well-developed lateral flower buds indicated that most buds of 'Red Wing' that were developing at the end of the treatment period had continued to develop. There were none with continuous 65° LD without B-Nine and 0.8-0.9 per stem with continuous 65° SD or six weeks of 65° SD followed by 50° with either photoperiod. Shifting to 65° LD after six weeks reduced that number by half. With B-Nine, all plants with six or 12 weeks of 65° SD and those shifted to 50° after two or four weeks of 65° SD averaged more than two well-developed lateral flower buds per stem.

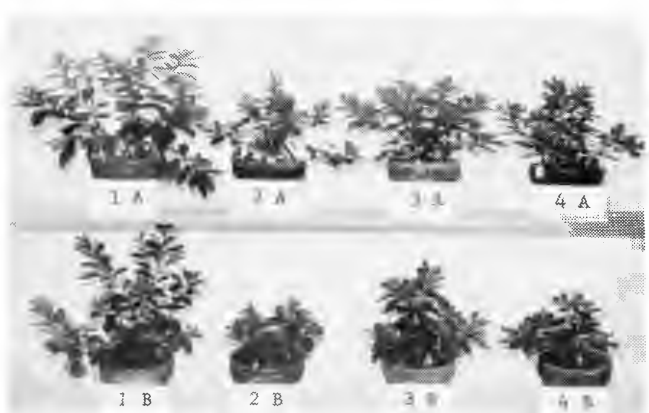

Figure 3. Effect of constant environment and B-Nine on growth of 'Red Wing'. (1) 65°-LD; (2) 50°-SD; (3) 50°-LD; (4)65°-SD. (A) Check; (B) B-Nine.

Figure 4. Variation in time of flowering of some typical non-refrigerated plants of 'Red Wing'. (13) Continuous 65° SE; (10) 6 weeks 65° SD followed by 65° LD; (11) 6 weeks 65° SE followed by 50° SD; (12) 6 weeks 65° SD followed by 50° LD. (A) No chemical treatment; (B) B-Nine applied.

'Alaska' produced almost no well-developed lateral flower buds without either continuous 65° SD or B-Nine. Even with B-Nine, plants shifted to 65° LD after four weeks of 65° SD or to any environment after zero or two weeks of 65° SD averaged 0.3 lateral flower buds or less per stem.

The number of petaloids produced by 'Red Wing' was greatly increased by B-Nine—from an average of 0.28 per flower without to 2.9 with B-Nine. Petaloid count was also affected by temperature: as number of weeks at 50° increased beyond six, petaloid count increased from 0.3 to 0.74 per flower (without B-Nine).

Temperature also had another very obvious effect on 'Red Wing' flowers. Whereas the sepals (calyx tube) of this cultivar are usually petal-like in size and color, those grown with any 50° exposure tended to be small and have distinct and often greenish segments. With eight weeks or more of 50° (four weeks or less of 65° SD), almost all flowers were without conspicuous calyx tubes.

The data discussed are not shown because of the need for anyone seriously researching the subject to refer to the original literature. Another article discussing a series of follow-up tests on effects of photoperiod and growth-regulating chemicals on azaleas is planned.

Figure 5. Calyx tubes of 'Red Wing' flowers as affected by temperature. (1A) continuous 65°; (2A) 4 weeks

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AMERICA'S NATIVE AZALEAS

Henry T. Skinner

In the far-off days of America's settlement and exploration, her shrubs and wild flowers were eagerly sought by the courts and nobility of Europe. Among these treasures there were few items more greatly prized than the occasional specimen of our eastern azaleas. The first to reach England from Virginia was the white swamp azalea, *Rhododendron viscosum,* which, in 1680, took second place, only, to the tulip tree as an attraction of Fulham Palace, residence of the colorful Bishop Compton who happened then to be in disfavor with the Papist Court of King James II. Identifications were nebulous in those days, and the new plant was named or described by the Bishop's botanical friend Plukenet as *"Cistus virginiana flore et odore periclymeni"*—"the Cistus from Virginia with flowers and fragrance of the honeysuckle." *Cistus* proved later to be a rather wild guess, but the popular name of "swamp-honeysuckle" has stuck even though the plants are not at all related to true honeysuckles. All wild azaleas have remained "bush-honeysuckles" to the countryfolk of our southern states.

The pinxterbloom, *R. nudiflorum* (now *R. periclymenoides,* Ed.), arrived just a little later, sent by John Bartram, King George the Second's Botanist-in-America, to the ardent English collector, Peter Collinson. "Pinxter" derives from the use of this azalea's pink blossoms in the Pinckster Frolics marking the Feast of Pentecost in New York, which was then Niew Amsterdam. It is scarcely surprising that the flame azalea, *R. calendulaceum,* was the next passenger to Europe, for this, the "Sky Paint Flower" of the Cherokees, had been named the fiery azalea by William, the son of John Bartram, and glowingly described by him as "certainly the most gay and brilliant shrub yet known." The introduction, this time, was to Belgium and France instead of England. The plants and seeds were carried by the French botanist, Andre Michaux, were rescued from shipwreck, and were apparently spared through the personal intercession of the Empress Josephine when her husband, Napoleon, threatened destruction of the botanic garden in Ghent in 1802. Other species followed soon after, but these three, together with the yellow azalea of the Caucasus, *R. luteum,* provided the principal ingredients for the supreme confection of Mortier, a garden-minded baker of Ghent, Belgium—the confection, of course, being the Ghent hybrid azaleas. Other crosses were made and along with the Ghent azaleas, formed the basis of the Knaphill hybrids. From these, in turn, came Lionel de Rothschild's magnificent Exbury hybrids of current use. To such degree have America's wild azaleas been prized by the gardeners of other lands.

In matter of distribution, these native azaleas come from the woods and streamsides of some 27 of our eastern states, from upper New York to Florida, Texas, and the Midwest, with one outlier, the western azalea, in southern Oregon and California. They comprise a present-day listing of 17 species in a flower color range of strong red to orange, yellow, clear pink, lavender, and purest white. These colors are often found in varied combinations within the same flower, in different flowers of the same bush, or among different individuals of the same species. Each species, moreover, as with all plants, comprises a wide range of individuals which are always different from one another, with respect to a variety of characters besides that of flower color. The species, in other words, is variable and, of course, there is still greater variation from one species to another. While in the flame azalea the average (and perhaps most easily obtained) representative is likely to be of genuine garden merit, in other kinds, such as the swamp-honeysuckle, the average plant may be poor to nondescript from the display standpoint. The solution lies, of course, in the process of selection. The best representatives of the better species could be ranked excellent, while even in the less exciting species the better selections can be very good. One can find good forms in the wild but, unfortunately, it is not easy as yet to obtain the best from commercial sources. They are being grown, however, and they are also being propagated.

In reviewing characteristics of the several species, there seems merit in grouping them by color, since flower color often, though not always, implies a degree of botanical kinship, so let us start with the reds, red-oranges, and yellows.

At the top of this list, the whole list, we have no hesitation in placing the flame azalea, *R. calendulaceum,* of the lower elevations of the southern Appalachian mountains. In hardiness and for its splendid show of large, clear yellow to orange, red or pastel-shaded flowers, borne on bushes up to 10 feet or more in height, the flame azalea has few, if any, peers. A maturing specimen in full flower has a grace that no Knaphill or Exbury hybrid can probably ever equal. Though taxonomically unseparated, the flame azalea actually appears to comprise two forms: A large-flowered, lower elevation population which flowers in mid-May, and one with slightly smaller flowers which blooms at higher elevations in early to mid-June. The second variety provides the splendid display at Soco Gap and along other stretches of the southern end of the Blue Ridge Parkway from Soco to Great Pisgah Mountain. Both forms of *R. calendulaceum* are tetraploid with 52 chromosomes, suggesting that this may be a species of comparatively recent evolutionary origin. *R. canadense* is also a tetraploid. All other species are diploid, with 26 chromosomes.

Closely allied to the flame azalea, and quite probably a parental type, is the smaller-flowered and lower-growing Cumberland azalea, *R. bakeri,* a plant of the Cumberland Plateau from Kentucky, south to Georgia. Its colors are very similar except for a stronger tendency towards red. It is proving especially useful for garden decoration and for breeding purposes by virtue of its delayed flowering in mid-to-late June. Still later flowering in July and August, and unique from both decorative and breeding standpoints, is the plumleaf azalea, *R. prunifolium,* with its similar color range of apricot to orange-red and red. This species eventually forms a large, round-topped bush, with abundant flowers held more or less vertically above fresh green foliage. Most clones are decorative, and cuttings root more readily than those of any other orange-to-red azalea. But the plumleaf hails from a relatively small section of southern Georgia and Alabama and may not be hardy much north of New York.

The two remaining, in the red-yellow orbit, are the red Oconee azalea, *R. speciosum* (now *R. flammeum,* Ed.), and the pale to deep yellow Florida azalea, *R. austrinum.* The first has particularly good color, while the second is especially vigorous and roots well from cuttings. In hardiness, they are comparable to plumleaf azalea, but both are still scarce in nurseries.

Allied to the flame azalea, though yellow only in its blotch, is the beautiful, predominantly pinkish western azalea, *R. occidentale.* Deliciously scented and a contributor to the finest of the garden hybrids, this western azalea unfortunately has proved useless in eastern gardens. Like the western dogwood, it simply will not grow unless grafted, perchance, to the roots of an eastern species.

Turning next to the pinks, we must accord first place to the pinkshell, *R. vaseyi,* from a mountain habitat in southwestern North Carolina. Botanically distinctive in its alliance with the little lavender-flowered rhodora, *R. canadense,* of the northern bogs, and as an exquisitely modeled miniature of the Japanese royal azalea, I would rank pinkshell next to flame azalea for garden value. It is early blossoming and is variable in intensity of pink. When a choice exists, the deeper shades are generally to be preferred—with exception of an excellent clear white cultivar which has been called 'White Find.' It grows to 6 or 8 feet tall. The foliage is clear and turns bronzy red before falling.

Differing in its grayer foliage and in its pointed petals, widespread at the base, but almost equally good, is the famed rose-shell azalea, *R. roseum* (now *R. prinophyllum,* Ed.), of the mountain tops of the Shenandoah. This lovely clove-scented azalea actually follows the hill tops all the way into southern Quebec and is extremely hardy. Its darker color forms, again, are the more attractive. Its one major fault lies in its reluctance to be propagated by cuttings.

The two remaining pinks may well be the best known of all "bush-honeysuckles," for between them they brighten the woods and hedgerows over enormous stretches of countryside. *R. nudiflorum* (*R. periclymenoides*), the pinxterbloom, may be found from South Carolina to Tennessee, West Virginia, and New England. Its southern counterpart, *R. canescens,* the Florida pinxter, or hoary azalea, extends from a South Carolina overlap area to Florida, Texas, Arkansas, and the southern parts of Tennessee and North Carolina. Both are very variable and both have a color range from the occasional pure white through all shades of pink to plum red and purple. Grown in moderate sunlight, the best selections are free-flowering and highly decorative despite the fact that more ordinary forms can be unexciting to quite poor. Florida pinxter may attain heights of 15 or more feet and in flower and habit is somewhat the more graceful, but it also is more tender. Its hardiest representatives will come from the more northerly part of its range and should succeed in southern New England. They will flower in early to mid-May.

Within the third color group, we have a choice of six white-flowered species which, together, are capable of providing an almost continuous display sequence from April to September or later. All six, however, are not of equal garden merit. As companion to the best of the reds and pinks, my own first preference, as of this writing, would be for the elegant, low-growing, gray-leaved and deliciously scented coast azalea, *R. atlanticum.* Its blossoms are of good size, and nicely borne. Fall foliage can turn a lovely color; the plant tends to be vigorously stoloniferous and also can be readily multiplied by cuttings. A close runner-up to the foregoing, and one which flowers at about the same time in early May, is the Alabama azalea, *R. alabamense.* Little grown and seemingly little known, this is a true beauty. Of purest white, its flowers are yellow blotched and distinctively lemon scented. Though basically low-growing (to 2 or 3 feet only) and somewhat small-flowered, the Alabama azalea has been induced by environment and the insects to produce a taller and much showier *canescens*-influenced phase with big, round, pincushion flower balls. As luck has it, this is the form most readily available from commercial sources.

A third good white, July-flowering and of ironclad hardiness, is the sweet azalea, *R. arborescens,* of the mountain streamsides of central Georgia to Pennsylvania and New York. Even the average plant of this species has a plentiful supply of reasonably large flowers so long as the soil is moist and overhead shade is not too dense. The foliage, sometimes gray beneath, is glossy, clean and attractive. The bush tends to be upright and fairly tall, and fall color can be striking.

Swamp-honeysuckle, *R. viscosum,* the azalea of such early export, is typically a stoloniferous, green- (rather than gray-) leaved plant of wet soils of the Coastal Plain and lower Piedmont from the Carolinas to New England. Blossoming is in late June and early July but, with exception of occasional individuals, and in comparison with the sweet azalea, the flowers tend to be small

and less than exciting. Nevertheless, they are strongly and sweetly scented and may well make up in quantity for what they too often lack in individual quality. While the swamp azalea contributed fragrance, hardiness, vigor, and heat tolerance to the Ghent hybrids, its influence upon flower size was unquestionably negative.

The last two whites are of minor significance for the northern gardener. The Texas azalea, *R. oblongifolium,* offers no improvement over *R. viscosum* and is less hardy. The hammocksweet, *R. serrulatum,* is the *"viscosum"* of the Gulf Coast, within a shoreline band extending from central Florida to Louisiana and, probably, Texas. It is only variably hardy in the north. Its prime merit is lateness of bloom, and we are using it at the National Arboretum to produce hybrids for August and September effect. Hammocksweet has an attractive rounded growth habit and carries good foliage both in summer and autumn, but its white to creamy flowers are unfortunately quite small.

These are the 17 species. All are variable and some have been subdivided into a number of botanical varieties such as the dwarf, mountain-top version of the swamp azalea, *R. viscosum* var. *montanum,* or the curious little white azalea of central Georgia and Alabama, which is usually listed as *R. viscocum* var. *aemulans.* Exclusive of the species, however, a number of natural hybrids are worthy of consideration, for natural hybrids do occur, quite frequently, when the separate species of this enormous azalea population happen to meet. A series of these hybrids is being grown by fanciers in various parts of the country and some of the best will doubtless find their way into general cultivation.

Perhaps the brightest aspect of this reawakened interest in America's wild azaleas centers around their increasing reuse in breeding projects focusing upon new objectives. The loveliest hybrid from the hand of a Van Houtte, a Koster, or a de Rothschild may amount to little in the gardens of Washington, D.C., Philadelphia, or New York. The cool climate of Western Europe is not the climate of our eastern seaboard, and there is more to a successful plant than flower size and color. Our natives were born to winter cold and to summer heat. Through the recombining of the best of our wild species with the best performers of Europe's hybrids can be evolved new races of garden azaleas equal to the finest from overseas, with attractive habit, with flowers of good quality, and the ability to perform with minimal care.

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"Azalea Classics" are articles from in the past which *THE AZALEAN* staff deems worthy of being brought to the attention of today's azalea enthusiasts.

YES, YOU CAN TAKE IT WITH YOU

Rolf and Simone Schilling
Lottsburg, Virginia

If you belonged to the Rhododendron Society, you probably read of our moving about 2500 azaleas, rhododendrons, and other plants to Mollusk, Virginia, 400 miles from our home on Long Island, New York in the early '70s.

Unfortunately, we were unaware of your Virginia soil, since on Long Island we have the same trees and bushes that grow here. Within a few months we had lost over 500 of our prized plants, even though we lived on a hill. But, as it is said, "Everything happens for the best."

My husband Rolf came in one day after working in the garden and said "Let's get out of here while we are able." For a moment I thought he had lost his mind, but after talking it over I went along with him. We started the next day to find a more suitable place with more room. It wasn't easy, but we finally found the piece of land we now live on, 28 miles from our place. The difference was that the soil was sandy instead of clay, and it seems that since we moved here we have had nothing but droughts. Rolf is kept busy moving sprinklers all day. Once the plants are established, it isn't too bad.

But, can you imagine moving those plants once again and the only help we had was to hire a truck for all the large azaleas and rhodos. Every day we moved as many plants as we could accommodate in my small station wagon, since we only had that and a VW Bug.

It just goes to show you that it can be done, and you do not have to lose your plants as was happening to us. I believe over 90 percent of our plants would have died there had we not moved.

Of course, I was making cuttings as soon as we got to Virginia. On Long Island, we do not see 'George L. Tabor', 'Pride of Mobile', and other of your Southern Indicas. I also brought down deciduous seedlings that I had started in New York. I have not been so lucky with them. I believe it is too hot for them, as I lost most of my large plants. The *mucronulatum* are the easiest to grow from seed. It is not every year that I can get seeds, as they bloom so early and we often get a freeze.

We have had so much rain this winter that I believe that we will have a good Spring this year.

In my next article, I will tell you about the *atlanticum* we found while moving and also how I make my cuttings.

A FEW MISTAKES WITH EVERGREEN AZALEAS

Ryon Page
Silver Spring, Maryland

In the course of experimenting with azaleas over the past thirty years, I must have met most of the problems common to azalea hobbyists and have walked at least once into each pitfall that lies in wait for the backyard azalea gardener. Presumably, most azalea lovers are better qualified at the basics of gardening than this beginner has proved to be. But a confession may be of help to others. My more significant problems, and the solutions eventually adopted, are sketched below.

SITUATION: Located in Silver Spring, Maryland, one half mile north of the Washington, D.C., Beltway. Zone 7A. The temperature can drop to ten degrees above freezing; on rare winters lower. Snows to fifteen inches deep (of late). Lot just under one-sixth of an acre.

OVER-WINTERING ROOTED CUTTINGS

Since my first small success with cuttings in the '50s, no summer has passed without a new attempt and at least a few rooted cuttings to be carried over the winter. Winter protection methods have ranged from a sheet of clear plastic over that first small, shaded bed, through make-shift cold frames, to light set-ups in the basement, and eventually to a heated greenhouse. Strategies have included, as well, trusting large numbers of newly rooted cuttings to the elements for their first winter.

My first coldframe was set six inches below ground, with a glass cover on a super-structure that extended another ten inches upward. In it were maybe 200 rooted cuttings. More than half of them died during the winter, mainly due to lack of proper watering. The same project for the following year gave similar results. It was too easy to forget the watering.

The next coldframe was one foot deep. The plastic cover in this case had holes that allowed rain to filter in. This gave improved results, but still carried over hardly 50 percent of the little plants to spring. Those around the edges got little benefit from the rains.

Best success in early efforts at over-wintering came from putting the plants under fluorescent lights in the basement, where they could be watched more closely and kept from becoming overly dry.

With the installation of a greenhouse and an automatic misting system a dozen years ago, the easier rooting process was so tempting that the taking of cuttings became very nearly a year-round practice. This started in mid-June with cuttings from selected outside plants and continued over the summer. Each fall has found half a dozen or more flats of rooted cuttings in the greenhouse. By February, and continuing into the spring, new growth is clipped and put under mist for rooting. By early May, there is a new crop of rooted cuttings, some years as many as 500.

Although a high percentage of these new plantlets are in the hands of others before the end of their first summer, the over-supply brought on a need for easier methods of carrying them over winter. The major solution found was to plant them outside, in ground level beds, carrying them over winter with no protection other than a two-inch layer of mulch. This has worked well for plants that are well-rooted early in the season. A few give up the fight, but the rest need only a watch against being pushed out of the ground by freeze-thaw cycles. Some die to the ground during the winter but put out new growth in the spring.

Those cuttings rooted late in the season, along with a good sampling of the newest acquisitions, go into the greenhouse to keep the cycle going. Naturally, this batch includes a few especially prized cuttings taken early or late; and some of uncertain hardiness under our winters are carried in for an extra edge toward success.

Overall, my most serious problems in carrying rooted cuttings over those earlier winters were with letting them get too dry. Other hobbyists may be sufficiently watchful to keep the tiny plants watered in a cold frame, window well, or other outside facility. Though admittedly not always feasible or convenient for the azalea lover, my solution has been to keep them inside under lights or in a greenhouse.

MARKERS

In the early days, azalea names seemed unimportant. I made little effort to keep a tag or to replace it when it broke or the name faded. The first reason for keeping names was a practical one: time after time I would search out and bring home a new batch of small plants, only to find that half of them were already in our yard from earlier purchases. The more compelling reason, rooted in better communication with others on the subject of azaleas, developed as the hobby grew more intense. It was to be at least twenty years before I reached the stage of throwing aside any cutting or small plant that had lost its identity.

My problems with tags must have been typical of those for anyone working essentially alone in the hobby. From one time to another a tag, or a group of them, would: disintegrate over winter, break into pieces, fade, go entirely blank, come untied and get separated from its plant, become so mouldy as to be illegible, get lost on the plant; too small to be found, or become scrambled when squirrels try to find nuts in a flat of cuttings.

It is not surprising that our yard gradually filled up with untagged azaleas. After more than a decade of searching for durable, legible, tags some reasonably satisfactory solutions began to emerge, though none is close to perfect.

A slip-on tag of stiff white plastic was convenient for

small cuttings, but numerous names would be lost a year later when ears broke and the tags dropped to the ground. Wooden markers, like a popsicle stick, rotted quickly. A next effort was with tags cut from a white Clorox jug and tied to the plant with insulated telephone wire. These tags were highly durable, but marking ink was in most cases short-lived. Labelmaker tape, glued or tied to the clorox tag, was durable, but labeling with these was a tedious process when tagging hundreds of small plants.

Half a dozen years ago another ASA member recommended a strap-like tag of flexible vinyl, fastened to the plant by slipping the tip end through a slot in the other end. Thus far, that one promises to last for years. In rare instances one of these tags has become too mouldy to be read, but not one of them has as yet broken.

It remained to find a pen with permanent ink. The one I find best of many tried over the years is Pilot, permanent black, recommended by the same ASA member. A red ink of the same name, billed as permanent, quickly washed off the tag.

Name strips made on a labelmaker, tied on with insulated wire, are still on many of the plants in the back yard. In spite of their problems, they serve my purposes fairly well, since most of the plants back there are small enough that the tape can be located easily. At this point, the most frequent cause for losing the identity on a plant in our yard is a breaking of the limb to which the tag is attached. One means used for avoiding this is attaching two tags when the branches are flimsy.

THE SOIL

Our lot had been part of a farm, but the soil proved to be hard clay. Much of the upper layer had come from the basement excavation; but even where that was not the case a pick, swung with considerable force, was required for digging. Early attempts at vegetable gardening showed a sore need for serating materials; and in at least one case, a shrub planted in a carefully prepared two-foot deep hole died of drowning.

Early on, the children needed most of the yard for play space, so that flower and shrub beds were limited to narrow strips along fences and against the house. By the time azaleas became a serious hobby, these strips had good drainage, thanks to deep cultivation with mattock, digging iron, and rototiller and to the addition of coarse sand. Drowning of azaleas was to become a problem some years later, when they would take over the open spaces.

Gradually it became clear that the back-fill around the foundation included concrete chunks, pieces of brick, and other debris left over from construction. Discovery of this condition came with the poor performance of plantings. Correction of the problem, of course, required digging out the unwanted materials closest to the surface, and re-making the soils.

A mistake of those early years was failure to add sufficient proportions of vegetable matter to the azalea beds. Trees in our yard, and in the neighborhood, were small, contributing little to compost heaps, and peatmoss seemed a bit expensive. By the mid-'60s, I gathered courage to roam the community, collecting leaves to make up for the local shortage. Then, as the trees along our street gained enough size to produce leaves in quantity, I collected and composted them each fall, along with those from our own now-maturing trees.

About 15 years ago, azalea beds began spreading to new parts of the yard, areas where water would stand in the bottom of any hole dug for a flower bed. To combat this, I raised the beds above the surrounding ground level. Each new azalea bed received a six to eight inch layer of compost and shredded leaves and a three-inch layer of sand, to be worked into a foot-deep bed.

One lesson learned has been that one can expect too much of vegetable matter. An excavation for a greenhouse left me with nine cubic yards of "cellular" dirt. Eventually, much of this became the main ingredient of a mounded azalea bed. In forming the mound, I incorporated probably half as many wheelbarrow loads of partially composted leaves as of dirt. It was inconvenient at the time to add more than a token amount of sand: and the bed was not well mulched. Small azaleas planted in this bed thrived for three years, then slowed in their performance. A check showed that the vegetable matter had rotted away from the soil, leaving little more than the original cellar dirt. Roots of the plants were showing signs of unhealthiness. Sand has now been added, along with a new supply of compost, to correct the situation.

SOIL ACIDITY LEVEL

Most of us are well aware from the start that azaleas need an acid soil. My pH tester, a fairly simple one, comes out to help when a new azalea bed is being prepared. The usual methods serve to lower the reading when needed: liberal additions of Canadian peatmoss, shredded oak leaves, pine needles, or other acid vegetable matter; treatment with powdered sulphur (care required in handling) or other suitable chemicals; and keeping an acid mulch over the soil. But though it should have been obvious all along, only lately did I realize that watering, over a period of years, can drastically change the pH of azalea beds. A four-year-old bed unexpectedly tested at pH 7. The rise could be attributed to only the alkalinity of the public water supply. It still is necessary to water the beds, but they now get a closer watch on pH levels.

ROOT-BOUND PLANTS

During the early years, my azalea purchases were for the most part first-year cuttings, decidedly not old enough to be potbound. For this reason, it was only recently that I learned how troublesome a root-bound plant can be.

Three years ago, becoming discouraged with the progress of the plants in a small area, I took them out to remake the bed. Examination of the plants, the survivors of ten bought a dozen years earlier, showed that the roots of each extended barely beyond the root-ball's size and shape when planted. They were still curling into the volume and shape of the original five-inch pots. In another instance, I put a larger plant, about five years old, into the ground from a peck basket without disturbing its roots. Though the surrounding soil was good and the plant was watered at least as well as those around it, that plant has lost in size instead of growing. It undoubtedly was root-bound. A cutting from it has grown in four years to be larger and healthier than the mother plant.

From the advice of others, and as borne out in my own recent experimentation, I have found that roots which have grown into a tight ball in a container must be given some freedom in the process of being planted. Root ends need to be pulled loose and spread outward. An alternative treatment is scoring the sides and bottom smartly with a sharp knife. The latter approach is brutal but fairly effective.

PLANTING NEAR MAPLES

Our first mistake on this was in voting for the planting of maples in the planning strip, that is, between the sidewalk and curb, along our street. Though they grew quickly and soon provided good shade, within 15 years the roots from the one at our yard were sapping shrub beds 25 feet away. After thirty years the tree is 11 inches in diameter, with its roots matting all azalea beds within reach. To compound the problem, about 15 years ago I put a Japanese red maple seedling at one side of the house, three feet from a mature "Magnifica' and within six feet of other azalea plantings. The "little" red maple has offered good leaf color in spring, but is now five inches in diameter and 20 feet high. It competes, very successfully, with azaleas a dozen feet and more away.

To live with these trees, I chop their roots annually at the edges of beds, each February throw some extra cotton seed meal to the azaleas within maple root range, and favor those plantings with extra water in dry seasons. Plants in beds 20 and 30 feet from the large tree have done nicely in spite of maple roots. 'Magnifica' suffers, but continues to bloom well. 'Delos', five feet from the red maple, is struggling to survive.

EXCESS WATER

Three years ago, two large azaleas in the foundation planting began to show signs of poor health. It took me six months to discover that a splashboard at a downspout was out of position and the plants were drowning. By that time the roots of one had rotted away and so few roots were left on the second that it eventually gave up the effort to live. Those two plants, and eventually a third close by, were a loss. The moral in this case was: be more observant of drains.

RESULTS

Of course, the mistakes listed have not overshadowed all else. In spite of errors, my turn-out of cuttings has sometimes reached 1,500 in a year. The record is improving in other ways as well. Except during my occasional lapses into carelessness, few plants in either the yard or greenhouse lose their identities in the course of a year; chicken wire or plastic keeps squirrels out of the cuttings flats; and soils and pH levels get a little better attention then formerly. In the meantime, I manage to find new mistakes to make and continue experimenting.

THE AZALEA TREE

Henrietta Hass

This article is in response to many requests for information on a plant stand we have here at the nursery.

The 'tree' was designed by my husband, Dallas, and daughter, Val, to end my complaints after a large leaf maple tree that had served as the hanger had to be removed. It was designed to be portable and non-tipping, even with an unbalanced placement of baskets. The sketch, done by my son, Erik, gives the dimensions of the steel tubing and the various pieces that make up the stand. The center pole could be made longer and the holes that were drilled to accept the arms adjusted to fit different size baskets. We are using 12″ pots in the photo.

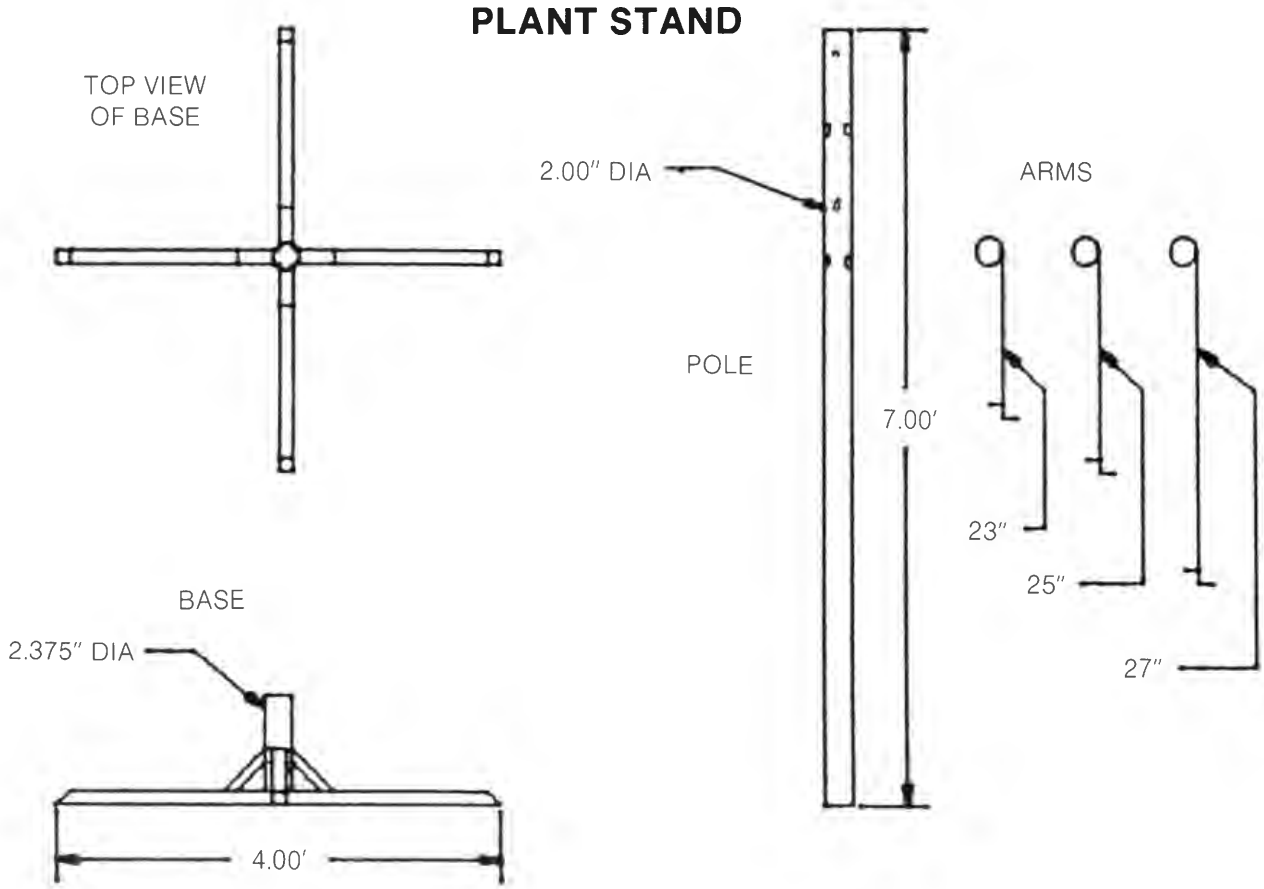
We took our sketch to 'John's Custom Welding' in Corvallis, and it was made up at a cost of approximately $110.00. We painted it with rustoleum matte black paint and assembled it here on the deck. Here's where the fun begins!

Growing azaleas as hanging basket plants has been a great source of enjoyment for us. The selection of varieties for what to try next are unending. In general, we have found that mounding or prostrate plant habits make for good subjects. In the photo are 'Bruce Hancock', 'Pink Cascade', 'Eikan', 'Double Beauty', 'Janet Rhea', 'Joseph Hill', 'Lady Robin', and 'Robin Hill Gillie'.

Some others we have found to be very good for this purpose are: 'Lydia R.' and one we've called 'Pink Eikan', which flowers like 'Asahi no Hikari' but without the upright habit, 'Eiko', 'Sanko', 'Frosted Orange', 'Hoshun', 'Red Fountain' and, *R. nakaharai* (Childers/-Kehr form). 'Maria Elena', 'Fascination', and 'Marilee' have proved to be too stiff or upright to make a pendant basket.

In many cases, it is really only patience and pruning that make the difference between the shape the plant

PLANT STAND



has naturally and what one can shape it into. As with all evergreen azaleas, it takes time to grow a plant that will put on a fabulous display. Under our growing conditions, we think baskets that are five or more years old put on a very good show. Of course, it keeps on getting bigger and better every year thereafter!

All is not the joy of growing and blooming, however! That thin plastic basket provides no root protection for the plant, and if left swinging through the winter breezes and freezes, death can and does occur. Winter protection is a must for these container plants.

Here in the Northwest, container plants can be protected in a cool greenhouse or cold frame. If you do not have either, try this tip passed on by George Drake from "Big Rock Garden", which he uses for his container grown maples. Set your container plant into a box that is several inches larger around than the container, fill the space between with a mulch of bark or sawdust, and place in an area that is protected from wind and winter sun. Check to make sure the soil is moist, and water as needed over the winter months.

When spring *finally* arrives, sit back and enjoy!

TREE FORM AZALEAS

John U. Rochester, Jr.
Franklinton, LA

Azaleas make wonderful "standards" or "tree form" plants and can be planted outdoors in the landscape or used as container plants for the patio, deck, and pool area. It requires a little time and patience, but within three to five years you can have a plant you will be proud of.

Using Southern Indicas, which are rapid growers, you can accomplish your goal much quicker than if you use slower growing Kurumes or other hybrids. I have been able to cut at least a year of growing time by using vigorous terminal growth as cuttings. I have made cuttings 15 inches to 20 inches long, stuck them in August under a mist system, and obtained nearly 98 percent survival. These are then planted out in gallon containers and put pot-to-pot the following spring. Here in the South, we can expect an additional 20 to 24 inches tip growth the first year. All side branches that try to form are removed, thus causing the plant to exert its energy into elongating the terminal leader. After the second year, these "whips" should be 40 to 48 inches long and of sufficient height to be pinched. Side branching around the terminal end will start, and the top part or "head" of the tree will begin to fill in. Continuous pinching of each shoot, as it elongates to four to six inches, will cause the "head" to thicken more quickly. I have pinched them as many as four times during one growth season, not worrying about flower buds forming, but try to stop pinching in early October here so that any new growth will have a chance to harden off before real freezing weather sets in (the last of December for us here in Louisiana). The main stem is continuing to thicken, and in the third year, we transplant to three or five gallon containers, depending on the size of the plant. None of our standards is staked. Any that are slanted or leaning are straightened up as we shift them to a larger container. At the end of the fourth growing season, some have heads that are thick enough to be saleable. A few of the more vigorous growers, such as 'Formosa', 'President Clay', 'Judge Solomon', 'Mrs. G.G. Gerbing', and 'George L. Tabor', will have to be shifted up to seven or ten gallon pots at the beginning of the fifth growing season. We continue to pinch often and remove sprouts; the latter can be easily done by sliding your hand down the trunk often during the growing season. At the end of the fifth growing season, we stop pinching early enough so buds will form at each tip. Thus, in the spring of the sixth year, the heads will be approximately 36 inches in diameter and a mass of blooms. The trunks will thicken to one and one half to two inches in diameter and can easily accommodate the tops without having to be staked.

Usually, in a commercial operation such as mine there is always a group of azaleas that cannot seem to be shifted up to larger containers when they should and the results are overgrown azaleas that are tall and spindly. These are put aside and worked into tree azaleas. I have had some very nice tree form azaleas of some varieties you would not think possible to take that form. These include 'Coral Bells', 'Snow', 'Bridesmaid', 'Red Ruffles', 'Dorsett', 'Yaeshojo', 'William Bull', 'Casablanca', 'Orange Macrantha', and 'Hatsushimo'.

One word of caution, however. In extreme cold freezing weather it is advisable to protect the plants, either by wrapping the trunks or by bringing them into protected areas. In 1983, when we had temperature extremes of 8 degrees F. here in Louisiana, we had bark split on the main trunks of the Southern Indicas. It was fairly warm prior to that freeze and the plants did not have enough time to condition themselves for winter.

So try something different in growing your azaleas. I think you will be richly rewarded for your time and efforts.

SUMMER BLOOMING AZALEAS FOR NORTHERN GARDENS

R. Wayne Mezitt
Hopkinton, Massachusetts

In the 1930's when our nursery began to expand and shift emphasis from herbaceous plants toward hardy trees and shrubs, a definite need became evident. The flowering season for most woody plants that were appropriate for our type of customers was quite short. Blossoms, with few exceptions, were limited to May and June. Those that bloomed earlier or later often lacked the garden appeal of the "in season" choices. Since we already grew a lot of our plants from seed, we decided to try to breed and select for improvements and to begin with rhododendrons and azaleas.

One of the goals in our earliest selecting and hybridizing programs at Weston Nurseries was to expand the flowering season and color choices for landscape plants. We began primarily with early blooming species, such as *Rhododendron mucronulatum* and *R. dauricum* var. *sempervirens* and *R. carolinianum.* Results of those efforts have been gratifying and have given us incentive to continue. The rhododendron hybrids 'PJM', 'Olga Mezitt', the Shrimp Pink Hybrids, 'Weston's Pink Diamond' and 'Molly Fordham' are among those we consider successful.

The extension of the flowering time towards the later season follows a similar pattern, but with azaleas rather than rhododendrons. Our main azalea choices at the start were *R. arborescens, R. viscosum,* and *R. calendulaceum.* The first two are native to northeastern areas of the United States while the latter is a more southern native. We then included *R. bakeri* and *R.* x *gandavense,* and eventually *R. prunifolium.* Surprisingly, all six species apparently have similar winter flower bud and plant hardiness. This good fortune enables the resulting hybrids to be useful even in many colder northern landscapes.

Although my dad, Edmund Mezitt, had performed hybrid crosses since the mid-1930's, he first began keeping records in 1950. That year he recorded 33 crosses, eight of which were for the purpose of extending azaleas blooms later into the spring. Those first attempts involved trying to intensify flower color among naturally occurring populations of seedling *R. arborescens* azaleas. He selected for improved color and performed crosses again with them. While this did not in itself extend the season, it did create a more colorful starting point with the native species. Since *R. viscosum* was later blooming, he used the same procedure with it and also began cross-hybridizing *R. arborescens* and *R. viscosum.*

One of the major breakthroughs occurred in 1957 when he received a group of plants from a collector in the Cumberland Mountains in North Carolina labelled *R. calendulaceum.* They were June blooming in orange shades, obviously mislabeled, and later identified as *R. bakeri* (syn. *R. cumberlandense*). His use of these plants with his now improved natives began the cycle of

In about 1965, Fred Galle, then at Calloway Gardens in Georgia, sent us some plants of *R. prunifolium* he thought might be useful for extending the flowering season in our hybridizing program. His impression was that these July and August blooming southern plants might be hardier than their range indicates. My father had used *R. prunifolium* once before in his 1957 hybrids but was somewhat concerned with the potential for reduced hardiness. Fred Galle's suggestion gave my dad a renewed courage and in retrospect proved valid. Many of the seedlings from Fred Galle's plants (and dad's 1957 attempt) have tested to be flower bud hardy to as much as -24°F.

We began using *R. prunifolium* in our crosses cautiously because we could not be sure of the hardiness. Our thinking at that time was that the proven hardiness of *R. arborescens* and *R. viscosum* would probably help make some of the resulting hybrids hardy enough for northern landscapes. The same thing occurred with *R. bakeri.* While we have not yet tested bud hardiness of *R. bakeri,* it performs well in our fields (USDA Zone 5) every year.

Additionally, its hybrids that have been tested demonstrate hardiness well within the range for northern gardens, often -24°F or colder.

The following will show the color progressions we have observed with various crosses and some of the influences the different parents have had.

1) 'Deep Rose'. This selection blooms in early June. It is a fragrant *R.* × *gandavense* × *R. viscosum* hybrid, tested in the winter of 1985-1986 at the University of Minnesota Landscape Arboretum and found to maintain flower viability when subjected to temperatures of -24°F. We've listed it in our catalogue since 1971

2) 'Orange Essence'. A mid-June *R.* × *gandavense* × *R. viscosum* hybrid, this one is sweet scented and upright growing. It is still being evaluated.

3) 'Pink and Sweet'. This is an outstanding plant and one of our favorites because it is easy to propagate and succeeds almost everywhere. In 1958 we crossed a pink *R. viscosum* with *R. bakeri* and selected some superior plants. One of these was then hybridized with a pink *R. arborescens* in 1963, and 'Pink and Sweet' was one of the results. Its flower buds are hardy to -29°F. and it blooms for a couple of weeks in late June. It has a strong spicy fragrance and good summer foliage that turns bronze in fall.

4) 'Lollipop'. This selection blooms in late June and is similar to 'Pink and Sweet', but a little slower growing.

5) 'Independence'. This selection is a predictable Fourth of July blooming plant with red buds, small dark pink flowers maturing silvery pink. Its scent is heavy and spicy and it has a long bloom period. Upright growing, it is probably a grex and is the result of a 1958 *R. viscosum* × *R. bakeri* cross on a dark pink *R. viscosum* in 1963. We named it in 1971

6) 'Salute'. This selection blooms in early July with sparkling cherry-pink, tubular flowers and a slight fragrance. It is a *R. viscosum* × *R. bakeri* parent crossed with dark pink *R. viscosum.*

7) 'Summertime'. This plant is a slightly fragrant light pink in early July. It has blue green foliage and stems, and slight mildew susceptibility. 'Summertime' is upright growing and vigorous; flowers are hardy to -29°F.

8) 'Parade'. This selection has lightly vanilla-scented, dark pink flowers for about two weeks in mid-July. It shows very little mildew and tests to bloom after -24°F.

9) 'Sparkler'. This outstanding hybrid has a two week bloom period from early to mid-July. Its dark pink flowers have ruffled edges and a spicy chocolate fragrance. The foliage is blue-green with striking silver undersides and turns dark wine-purple in fall. Flowers are hardy to -24°F.

10) 'Golden Showers'. This plant is a hybrid we have apparently named before as 'Golden Anniversary'. It blooms in mid-July with peach-yellow flowers, has a slight vanilla fragrance, and is wide growing in youth but becomes upright with age. Its origin is a 1963 *R. prunifolium* × *R. viscosum* by *R. bakeri* × *R. viscosum* cross. Its flower buds have tested hardy to -24°F. This is a beautiful plant, but it is rather susceptible to powdery mildew.

11) 'Lemon Drop'. This selection blooms from mid- to late July. It is a vigorous, stiff, upright grower. Its foliage is green with silvery undersides and turns pink-purple in fall and is mildew resistant. Flowers are pale yellow with deeper buds and lightly lemon-scented. It tests to -34°F flower bud hardiness.

12) 'July Yellow #1 is a newer selection that has a long bloom period in mid-July. Its small, rich yellow flowers have a slight fragrance. It is wide growing with good mildew resistance.

13) 'Pennsylvania' is a 1963 *R. prunifolium* × *R. viscosum* hybrid, that has light pink and slightly fragrant flowers at the end of July. Wide and slow growing, it has mildew resistant foliage that becomes coppery in fall. Even though we've grown this for a number of years, we've just begun propagating it.

The next selections tend to be even later blooming. These all have primarily *R. prunifolium* parentage and lack fragrance. All are vigorous and wide upright growing in Hopkinton, Massachusetts and have bloomed reliably for many years.

14) 'Cherry Bomb'. This plant is outstanding with its large cherry red flowers. Like the others in this group it has mildew resistant foliage. Its flower bud hardiness has tested to -24°F.

15) 'Coral Glow'. This plant is bright orange-pink and blooms from late July into August.

16) 'Tangerine Glow'. This plant is late July blooming with dark orange flowers.

17) 'Everglow'. This plant flowers from late July into August and is dark orange-red. Its foliage is somewhat glossy and its flower bud hardiness has been tested to -2°F.

Typical fall foliage variations for the *R. viscosum* and *R. aborescens* hybrids range from bronze purple to coppery orange. The *R. prunifolium* hybrids tend to remain green until foliage drop in October-November.

As you can see, we have had some good success extending color in azaleas to mid-summer. Some other significant features have also become apparent and should be mentioned for the summer blooming azaleas as a group.

1) Cold Hardiness. Quantitative testing done at the University of Minnesota Landscape Arboretum indicates extreme cold temperature tolerance of flower buds in most of these hybrids. Our own qualitative tests agree. A number of other people throughout the U.S. are also currently testing them in their areas.

2) Shade Tolerance. All grow acceptably in light shade, but flower intensity and profuseness is reduced.

3) Fragrance. Flower fragrance varies from quite intense to none. It seems to be more noticeable on the June to early July blooming hybrids, and also on the less intensely colored hybrids.

4) Heat Tolerance. Many of these hybrids stay in bloom, even in full sun, for upwards of two weeks with daily temperatures in the 80° and 90°F range.

5) Attractive Foliage. Foliage is most commonly green, often has some gloss or a blue or silvery underside. Many appear to be significantly mildew resistant.

6) Autumn Color. Most turn attractive colors in autumn. Mahogany-bronze tones predominate, but copper and yellow are also common. Some, including most *R. prunifolium* hybrids, have no distinctive fall color.

7) Ease of Propagation. Cuttings taken when new growth becomes stiff usually root easily. They grow more easily than many azaleas, and spring bud break is more reliable than Exbury type hybrids. Tissue culture has been successful on most we have tried.

Some of the apparent drawbacks of these summer-blooming hybrids should also be mentioned:

1) All these summer blooming azaleas are deciduous. There is nothing but stems and buds visible in winter.

2) Foliage can partially mask flower color especially on vigorously growing plants.

3) Most of the summer blooming azaleas are not spectacular garden plants in most people's minds because they bloom when everything is in full leaf.

4) They probably require acid soils to perform well, although we have not tested for pH tolerance.

5) The public has little knowledge that such plants are available, so a market will probably have to be created to distribute them.

In recent years other growers in the U.S. and overseas have also begun to offer June-blooming azaleas. Among the ones we know about are *R. viscosephalum*, 'Carat', 'Arpege', 'Diorama', 'Jolie Madame', and 'Rosata'. We are integrating these in our testing program and evaluating them along with our own. Some appear to have good features, and we intend to incorporate them into our hybridizing program. As of this year, we are tracking about 100 of our own hybrids and a couple dozen from other growers. We are currently on the fifth or sixth generation in some of our hybrids.

We see a promising future for summer blooming azaleas and a good opportunity to extend landscape color and interest to more northern gardens. We think the obvious appeal of having reliable color at the time when people enjoy being outdoors will result in wide popularity of this type of plant. We will be continuing to hybridize and evaluate to extend color through the summer, for improved fragrance, and for optimum foliage and growth characteristics.

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A MEETING WITH GUS ELMER

John U. Rochester, Jr.
Franklinton, Louisiana

Back in 1981, when I became involved with the Azalea Society of America, I met some very interesting people in and around the Washington, D.C., area but soon learned that there were a few near me that had been growing, cultivating, and hybridizing azaleas for some years. This article is about one such person, Gus Elmer.

I had become interested in the Back Acres hybrids when I found out they were developed in Pass Christian, Mississippi, which is a little over 70 miles from where I live. I had stopped at a small garden center near La Combe, Louisiana, and saw some late blooming azaleas, one of them I recognized as 'May Blaine'. The owner, J. Wild, was very reluctant to part with any of them because they were for his own garden. He had been in contact with Gus Elmer of Kiln, Mississippi, and Gus had been supplying him with some of the Back Acres as well as a few deciduous azaleas. At the time, I was more interested in the evergreens rather than the deciduous. He suggested I contact Gus and was sure that I could get some plants from him. He was a very interesting person and took me on a tour of his garden center and his personal garden. When I left, I was the owner of my first Back Acres azalea—'Hearthglow'. That night, I called Gus Elmer and set up an appointment to see this azalea enthusiast and his gardens.

The following weekend, I journeyed to Pass Christian, taking the Kiln exit off I-10. Gus had given me easy instructions on how to get there, and as I traveled down this rural hard surface road heavily timbered with pine trees on each side my apprehension grew. Suddenly, I knew I was there, for on my right was an amazing floral display of large azaleas blooming underneath the high canopy of tall pines. Now, this was in late May, and azaleas had long ceased to bloom in our neck of the woods. By the middle of April most have bloomed out except the Gumpos, which bloom around the first of May.

Gus asked that I stop at the gate and blow my horn, as his Doberman Pinscher would be roaming the grounds. In no time, this short, slightly stooped man with a Jungle Jim hat appeared. Thinking him to be the gardener, I told him who I was and asked if I was at the right place for my appointment to see Gus Elmer. He quickly informed me I was and that he was Gus Elmer. He seemed to be bubbling over with energy and was eager to show me his garden and the Back Acres and Satsukis that were in full bloom. As we toured the garden, he pointed out certain varieties. I was truly amazed. We stopped near a plant that was in full bloom and I asked the variety. He told me this was one of the original ones that Ben Morrison had given him, and it should have the original tag that Morrison had put on it. Sure enough, there is was in Ben's own handwriting. I was overwhelmed. All of the Back Acres that Gus had were given to him by the developer himself. Gus had been propagating from these plants. As we toured his slat house of overgrown, crowded plants, he asked if I would be interested in some of them. I had come prepared with burlap just in case he had such plants.

It was then getting on toward lunch time, and he invited me to the house to meet his wife, Therese, and have a snack with them. We would dig the plants later. As we strolled up to the house he pointed out other interesting plants that he had been collecting over the years. Gus was of the famous Elmer Candy Company family from New Orleans. "Chinquopin Hill", as his estate was known, was his summer home. When he retired from the company, he and his wife lived there full time. Gus liked to use native plants and they looked very much in place scattered throughout the many flower beds in his garden. As we approached the house, my eye caught the unique azalea trailing down nearly three feet from a window box under the high windows of his enclosed car garage. He informed me that it was the original plant of *Rhododendron nakaharai* he had received from the National Arboretum. At the time, Gus was a cooperator for the Arboretum, receiving new azalea plants being introduced into this country. This was one of the parents of Harris' 'Pink Cascade', and I could see where the trailing habit came from.

Once inside, we were greeted by a very warm and enchanting person, his wife, Therese. She showed me later the beautiful water colors she was painting of all the "Back Acre" azaleas. She was quite talented, as was evident in the paintings. She was not quite through with all the varieties but was hampered by an injury to her arm from a recent accident. Later, she finished the paintings and brought them to a meeting of the Louisiana chapter for the group to see. Gus and his wife joined our chapter, and at one of the meetings presented a slide program of the hybrid deciduous azaleas he was working with. He showed us the ones he would eventually name and register in 1984; these are listed in Fred Galle's new book "Azaleas" (pg 110, First Edition).

After a delicious lunch, Gus and I went back to the slat house and began digging some of the Back Acres azaleas. I finally wound up with fifteen named varieties and four numbered ones, not named. They were very large plants, and I planted them in ten gallon containers upon returning to my nursery. These, along with my first plant of 'Hearthglow', were the start of my Back Acres collection. I have all of the Back Acres hybrids now, with the exception of the five or so that seem to be lost.

In trying to complete my collection and learn more about the Back Acres, I did quite a bit of research and letter writing trying to find the garden of Corinne Murrah but to no avail. I did hear from the Memphis Botanical

Garden about the collection there. I was informed that most of the plants had died since the original planting in 1967, the tags were lost on the remaining plants, and no map was made of the original planting as to where each variety was planted. So as it stands, there are still some of the Back Acres at the Memphis Botanical Garden. These would have to be identified when they bloom, and there is a remote possibility that some of the "lost" varieties could be there.

I made several more trips to Kiln visiting with Gus Elmer and on one, he took me to Pass Christian to "Back Acres", and I got to see the original site of where the hybrids were developed and to meet another very interesting person. Ivan Anderson, then 82, was still living there. I made other visits to Back Acres and from Ivan I found out a great deal about Ben Morrison and his work on developing the Back Acres hybrids. Ivan gave me cuttings of the few remaining azaleas in the "Back Acres" garden, and I treasure them to this day. On one visit with Ivan, we sat in Ben's library, and he showed me many of his books, which were later to go to a university upon Ivan's death. I recorded our interview on tapes and in a later article will relate my association with this remarkable man.

One afternoon I got a call from a friend of mine in Mississippi telling me of the sudden death of Gus Elmer. We here in Louisiana that knew him, as well as others over the country, were saddened by the news. Gus was laid to rest in his beloved garden at "Chinquopin Hill" in a very quiet, private, family funeral. It's nice to know, however, that I have some of his plants in my garden, and I think about this wonderful man when I see the plants in full bloom.

GROWING DECIDUOUS AZALEAS IN SOUTHEASTERN LOUISIANA

John T. Thornton
Franklinton, Louisiana

Franklinton, Louisiana is located 50 miles north of New Orleans in the piney woods area of southeastern Louisiana. It is located on the border of hardiness zones 8 and 9. The soil is mostly strongly acid clay.

In 1967, I became interested in growing deciduous azaleas. Seed and/or plants were obtained for all the deciduous azalea species except *R. albiflorum* and *R. nipponicum*. *R. ferrerae*, *R. mariesi* and *R. weyrichii* of the *Schlippenbachi* subseries grew and flowered fairly well, however they seemed to be of doubtful horticultural value for this area. *R. amagianum*, *R. quinquefolium*, *R. reticulatum* and *R. schlippenbachi* of this subseries did not grow satisfactorily. *R. albrechti*, *R. canadense*, *R. pentaphyllum*, and *R. vaseyi*, of the *Canadense* subseries did not grow satisfactorily. In the *Luteum* subseries, *R. canescens*, *R. austrinum*, *R. serrulatum*, *R. prunifolium*, *R. flammeum*, *R. periclymenoides*, *R. alabamense*, *R. atlanticum* and *R. molle* grew and flowered well. *R. bakeri* grew and bloomed, but did not really thrive. *R. arborescens* grew well, but regularly blasted its buds. *R. calendulaceum*, *R. prinophyllum*, *R. occidentale*, *R. japonicum*, *R. luteum* and the mountain and northern forms of *R. viscosum* did grow satisfactorily. *R. prinophyllum* from Arkansas did not grow any better than the more northerly forms of the species. The Knaphill-Exbury and the Mollis hybrids were not successful.

PLANTING AND CARE

The *Luteum* subseries azaleas seem to differ physiologically from the evergreen azaleas. Nurserymen say that these deciduous azaleas require much more water when grown in containers than do evergreen azaleas and most other plants.

The deciduous azaleas have a long, strung-out root system that requires at least two years to develop in transplanted plants. It is therefore important to water transplanted plants regularly when needed until frost for the first two years following planting.

Container-grown plants should have most of the potting material removed with a high-pressure hose before planting so that there can be good soil-root contact.

No special soil mixture is necessary for planting provided the soil is acid.

The deciduous azaleas seem to thrive in both sun and shade. Except for *R. serrulatum*, they are quite drought resistant, once established.

R. canescens, *R. austrinum*, *R. serrulatum* and *R. atlanticum* will grow in poorly drained soils. The other species prefer better drainage.

OUTLINE OF AN EVERGREEN AZALEA CUTTINGS PROCESS

Ryon Page
Silver Spring, Maryland

Time for cuttings — From the time new wood begins to mature, through September. I prefer to begin in mid-June, searching for firm stems. For best success, take only current year's growth.

Size of cutting — May be from four inches down to tiny. I have succeeded with ½ inch cuttings for very slow-growing plants.

Mixture — Peatmoss and perlite, about half and half, or about 60 percent peatmoss and 40 percent perlite. Course sand can be substituted for the perlite.

Note: An optional mixture, suggested by Fred Galle and proving successful for me of late, consists of two parts peatmoss, two parts shredded pine bark, one part coarse perlite.

Container — A sterile pot or flat, with drainage.

Preparation of mixture — Fill the pot or flat close to top. Wet the mixture, making sure the peatmoss is wet. Drain well.

Preparation of cuttings.

Cut with sharp instrument.

Remove lower two-thirds of the leaves.

Dip lower stem in a mild rooting hormone; shake off excess.

If wood is well matured, wound the stem slightly to expose some of the cambium layer.

Inserting cuttings — Make hole with a dibble, put in lower end of cutting, and firm the mixture around it. Do not crowd cuttings.

Covering — Enclose pot or flat in a transparent plastic bag, keeping the plastic away from the leaves. Close the bag with a tie.

Placement and care of container — Put in bright light but out of sunlight. Check after a few days and at two-week intervals to ensure that mixture is thoroughly damp but not soggy. With luck, cuttings may root within five weeks. Some take much longer.

Cuttings taken late in summer, or not well rooted by end of summer, may be put inside under fluorescent lights. Place them six to twelve inches from the lights. Give them a long day. Keep covered with plastic. Keep medium damp.

Care of rooted cuttings — Gently lift out the rooted cutting with a dibble. Transplant it into a mixture much the same as above but with at least 60 percent peatmoss.

Protect during at least the first winter. It usually is sufficient to use a coldframe (or equivalent) without direct sun to cause extreme swings of temperature. A window well can serve. Or the plants may be grown under lights. Do not allow medium to become dry.

Freeze-thaw cycles may push tiny plants out of the ground. After planting, keep a winter watch. pressing the roots back into the soil if this occurs.

Note: There are many methods for rooting evergreen cuttings. The above method works for me.

ASA NEWS AND VIEWS

AZALEA CALENDAR

June 20	Brookside Gardens Chapter Meeting. 7:30 p.m. Davis Library, Bethesda, Maryland.
July 16	Northwest Chapter A.S.A. Annual Meeting & Conference. 9 a.m. - 5 p.m. Topic: "The Versatile Azalea". Nendels at the Airport, 7101 N.E. 82nd Avenue, Portland, Oregon, 97220. Program will include speakers on: Deciduous Azaleas, Landscape Design, Hanging baskets and summer blooming evergreen azaleas, Companion plants, Bonsai, Panel — question and answer period. Registration: $15.00 per person, includes buffet luncheon. For further information and registration write to: Ruth Amos, 1293 Starveout Creek Road, Azalea, OR 97410, Phone (503) 837-3542.
September 17	Glenn Dale Preservation Project Workday. 9 a.m. - 1 p.m. See report in March issue. For directions and more information contact: Roger Brown at (301) 577-7509.
September 18	Sixth Annual Arnold Arboretum Plant Sale and Auction of Rare and Unusual Plants. Rain or shine. At the Case Estates, 135 Wellesley St., Weston, MA. Public welcome 11-4, members 9-4. Admission free. Luncheon and beverages available. Proceeds to benefit Arboretum programs. For more information please write or call: Jo Procter 617-524-1718, Arnold Arboretum, Arborway, Jamaica Plain, MA 02130.
October 15	Glenn Dale Preservation Project Workday. See September 17.
November 19	Glenn Dale Preservation Project Workday. See September 17.

IN MEMORIAM

PAULINE B. ACAITURRI

On March 10, 1988, Pauline Acaiturri, of Sweet Home, Oregon, died after a long battle with cancer.

She was born February 2, 1925, in Sloan, Nevada, the daughter of William and Blanche (Leavitt) Bennett. On May 3, 1947, she married Joey Acaiturri at Boise, Idaho.

She graduated from Bend Community College and Portland State University and received her master's degree in library science from the University of Oregon. Polly, as she was known to friends, was dedicated to education, and her career included both teaching and work as a librarian. She retired from the Springfield schools in 1978. She was past president of the Oregon Philanthropic Educational Organization and instrumental in setting up the P.E.O. "Margerite" scholarship in 1970. This is a fund set up to raise money for women of all ages for continuing education. This past July, her husband, Joey, established a scholarship in Polly's name.

Jazz was a special interest to Polly and Joey and they made many trips to Jazz Festivals. Polly was a charter member and director of the Willamette Valley Traditional Dixie Land Jazz Society. This past summer, she and Joey served as judges for the 14th Annual Jazz Festival in Sacramento, Calif.

Polly was a charter member and instrumental in establishing the Northwest Chapter of the Azalea Society of America. She was a very active member and participated on many important committees, including the Ninth Annual ASA National Convention. She was also a long-time member and very active in the American Rhododendron Society.

Polly loved growing and showing her azaleas and rhododendrons. Most recently, she operated a nursery known as "Polly's Bloomers". Her garden contains over 500 cultivars which she tended with great joy. She also loved to travel and visit the famous gardens of the world. Polly and Joey made several trips abroad for this express purpose.

A friend characterized Polly as 'outgoing, honest, and forthright — she called a spade a spade — except when she called it that damn shovel!' Her warmth, wit, generosity, and friendship will be greatly missed.

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