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President's Letter

Robert (Buddy) Lee — Independence, Louisiana

The fall of 2006 has been a very active time for me with activities concerning our society. So many items have been coming to the forefront that it's hard to decide where to start. Fortunately, all topics are positive and continue to perpetuate our society toward a bright future.

Barbara Stump, the editor of our society's quarterly journal for the past several years, decided to relinquish the position to give her more time to pursue other activities. One major event that Barbara is working on at the present time is planning and coordinating the ASA National Convention and Membership Meeting titled, *Azaleas in the Pines – A Texas Garden Party*, to be held March 29 to April 1, 2007 in Nacogdoches, Texas. And just as a reminder, the convention overview and registration form was published in the Fall 2006 issue of *The Azalean*. From what I hear and read about the convention, it's going to be one of the best conventions ever. Make sure to mark your calendars and send in your registration forms early.

Barbara also has been voted to serve as treasurer for the Dallas Chapter of the ASA, which recently had a reorganization meeting in Houston, Texas. Bart Brechter, the newly elected president, and Barbara are planning yearly chapter meetings throughout the East Texas area.

In addition, Barbara will continue her duties with Stephen F. Austin State University and will oversee the activities at the SFA Mast Arboretum's Ruby M. Mize Azalea Garden. As you can tell, Barbara will have a full slate to keep her busy in the future. Thank you, Barbara, for all the time and energies that you devoted to making our journal the best ever. Best wishes to both you and Mike in your future endeavors. Thank you.

Pam Fitch is taking over duties of editor of our journal beginning with this Winter 2006 issue. The ASA Board had an easy choice when it came to selecting our next editor. We were extremely fortunate to have a qualified candidate apply for the position. Pam is a skilled journalist who is experienced with media relations, public relations, and marketing. She has proficient computer knowledge including graphic design applications. Pam's professional references gave outstanding comments about her ability to get tough projects completed and her ability to work well with others. I know Pam will be a great asset to our society and with everyone helping by submitting articles in a timely manner we will take our journal to a new and higher level. Welcome aboard, Pam.

Joe Schild has been busy lately with all the new Azalea City applications. South Gate, California, is our most recent city to receive the certification from our society. Houston, Texas; Tyler, Texas; and Palatka, Florida, are three more cities that have completed their applications and are in review. This is a wonderful project for our society and for the cities. Thanks, Joe, for all the work and effort that you are investing in this project.

There are a lot of exciting things going on with our society; too many to mention in this letter. If any member is interested in working with us in any capacity you will be more than welcome. Also, members are invited to join in the board meetings, and your comments will be welcomed. This is your society, and we need your input.

Welcome to all the new members. I hope that you will enjoy being a member of ASA. Please feel free to join in and share your azalea experiences and knowledge with us. If you have any questions about azaleas or the society, go to our Web site at www.azaleas.org.

I hope you are having a wonderful winter, and all your azaleas are happy and well mulched. See you in Nacogdoches!

Sincerely,
Robert 'Buddy' Lee



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

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On the Cover

‘Freddy’ is a sport of ‘Watchet’ named by Margie Jenkins after her son, who passed away several years ago from cancer. Ms. Jenkins is growing approximately 150 of the azaleas in four inch pots for the 2007 ASA national convention, March 29 - April 1 in Nacogdoches, Texas. For information about the convention, visit the following website: www.nacogdochesazaleas.com.



Photo Robert Lee

Stevenson's Collection of Kurume Azaleas—Part II

John M. Hammond—Starling, Manchester, England

Editor's Note: This is a continuation of the historical article that was published in the Fall 2006 issue.

Records of "Stevenson's Collection"

Under a "grand-fathering" clause, the names of J. B. Stevenson's Kurume introductions that were considered to have been available "in the trade" were registered in 1958 by the then International Registration Authority/Royal Horticultural Society (IRA/RHS) and were included in *The International Rhododendron Register* published in that year by the RHS. Whilst doubts have been expressed about the correctness of the spellings and transliteration of some plant names, what really matters is that the IRA/RHS had the foresight to "put a stick in the sand" and record the names and details of what plants were thought to have been commercially available at a particular point in time. J. B. Stevenson and James Russell both supplied information at the time the 1958 edition was compiled, and the content of the IRA/RHS records suggest they were based on this information, which, presumably, the RHS archived for future reference. Minor revisions were made to the names in the registration process where they did not accord with the expected format and spelling of Japanese epithets.(1)

Frederic P. Lee in *The Azalea Book*, Second Edition, makes passing mention of Stevenson, but only names 28 of his introductions.(2) Irrespective of problems with the transliteration of Japanese names, Lee's flower details correctly replicate the details for Stevenson's introductions in Britain.

As noted in Part I of this article, James Russell sent Fred Galle a copy of the listing of azaleas that were available from the Sunningdale Nurseries prior to its closure, together with further details of their origin on Galle's data sheets.(3) This listing included "Wilson's Fifty" and "Stevenson's Collection." Fred C. Galle in *Azaleas*, Second Edition, details 60 varieties in his listing of Stevenson's introductions from Yokohama Nurseries.(4) However, the relegation of this listing to *Appendix J* at the back of the book and the comment, "but most are uncommon in the U.S.A." suggests that Galle's book was compiled primarily for an American audience, which is most unfortunate. Galle's listing is incomplete, some spellings have been changed, some flower details do not correlate with the known characteristics of the plants that Stevenson introduced in Britain, and a Knap Hill introduction is included in the list. It is difficult to understand why this listing is significantly different from the information that James Russell supplied to Galle, as Stevenson's introductions preceded those of Beattie and other subsequent introductions in the United States.

To confuse the matter further, at the time of writing, in many instances the transliteration of names and the flower details available on the Internet in photographs taken in Japan do not correlate with either Galle's listing or the known details available in Britain for the Stevenson introductions. This suggests that other names have been duplicated in more recent years.

Table 1 provides details compiled from sources on this side of the Atlantic, as referred to above, for the 80 varieties introduced by Stevenson from Yokohama Nurseries. From the author's perspective the spellings, use of capital letters, and the flower details in Table 1 replicate the names under which the plants were propagated, supplied, and planted in gardens in Britain and Ireland; so this should form a viable basis for plant identification work in old British gardens. The consistency of both the spellings and the use of capital letters in the plant names in past articles written on this side of the Atlantic suggests that these were the names under which the plants were selected by Koichiro Wada and supplied by Yokohama Nurseries. At some future date it may also be possible to take up an invitation to return to Tremeer and look more closely at the collection with a view to verifying the names and details of the extant plants. In the meantime it should be noted that this is the first attempt to collate a more accurate listing of these plants from the scant information available and any comments on the contents of Table 1, or any other aspects of this article, would be most welcome. In this way we all benefit.

It seems inexplicable that the 2004 Second Edition of *The International Rhododendron Register and Checklist* is significantly less specific than the original edition; and, with the exception of 'Banzai', Yokohama Nurseries has not been recorded as the origin of the plants, Koichiro Wada has not been mentioned as being responsible for their selection, and neither has J.B. Stevenson been credited with their introduction.(5) There may well be some underlying reason for this approach, but it is unhelpful and is counter-productive with regard to the efforts of those individuals who are endeavouring to clarify the British introductions and groupings within the Kurume azaleas. Mention is made in the *Introduction* of the Second Edition, Note (j), *Informal Groupings*, of the informal azalea groupings, and the subsequent listing includes the Kurume azaleas. The note continues, "These groupings and many more can be found listed in F. C. Galle's *Azaleas*, where their origin and characteristics are described."

J. B. Stevenson's Kurume introductions were made directly to England from a well known Japanese nursery and were selected by a highly regarded Japanese plantsman, so

Table 1
A Listing of Kurume Azaleas selected by Koichiro Wada,
supplied by Yokohama Nurseries,
and introduced in 1927-29 by J.B. Stevenson of Tower Court, Ascot.

Editor's Note: The following details have been compiled from British sources. The spellings and use of capital letters reflects the names generally used for these plants in Britain since their original introduction. The reader is cautioned that many of the cultivar names in Table 1 do not conform to the ICNCP code (e.g., capitalization and the use of hyphens) nor with a Romaji translation from the Japanese language (e.g., 'Mizu no Yambuki' and 'Shjuchuke' are not possible).

'Agamujin'	Pure white, frilly with slight green spots. (a)	'Koranyuki'	Vivid tomato red. (c)
'Arziemakie'	Vivid salmon pink, deeper spotting.	'Kumagaya'	Pale flame red, red anthers, large calyx.
'Asahiryin'	Flame pink, deep red tube.	'Kumoidori'	No description found.
'Augigasana'	Shell pink, edges deeper,, spotted brown.	'Maihime'	White shading to greeny-yellow throat.
'Ayahime'	Bright rose.	'Maikojaku'	No description found.
'Azafujin'	Shell pink, deeper streaks, greenish ground.	'Maimsode'	Rose pink on slightly blue ground..
'Banzai'	Bright salmon pink, darker spotting.	'Metake'	Bright red.
'Chigo no Mai'	Rose pink, paler centre, bright red spots.	'Mikaera Zakura'	Pure white.
'Chiyo no Akebono'	Brilliant rose pink on slightly blue ground.	'Mikatanishiki'	Blush petals with vivid pink edges.
'Choraku'	Lavender pink, greenish white throat.	'Mizu no Yambuki'	Creamy white. (e)
'Fude Tsuka'	Rose, greenish cream centre, brown spots. (a)	'On no Sora'	Lavender, white anthers, odd brown spot.
'Fude Tsukasa'	Clear rose pink, paling to greenish white.	'Ouchi Shisti'	White, creamy tinge at centre. (b)
'Fuji no Asahi'	White, flushed rosy lilac on edges. (a) (e)	'Ouchiyama'	Lilac crimson.
'Fukuhiko'	Vivid crimson red flowers and anthers.	'Paikune'	Bright pink, pink anthers.
'Gaeshi'	Deep salmon pink, white anthers.	'Rankyoken'	Vivid orange red, red anthers, white stigma.
'Gyokoko'	Apricot red.	'Sahohime'	White, flushed rose, deeper spots. (b)
'Had no Sato'	Soft lilac pink, paler anthers, large calyx.	'Senju'	Apple blossom pink, crimson spots.
'Haru no Akebono'	Salmon rose, paler throat, crimson blotch.	'Senka'	Deep flame pink, darker spots. (b)
'Haru no Kyokii'	White, light green buds, odd crimson petal.	'Shikishima'	Lilac pink, darker spots, light centre. (b)
'Haru no Shiou'	Blush, flushed deep lilac edges. (a)	'Shintsune'	White, freely sports salmon pink.
'Harumiji'	White, no spots, with a large calyx.	'Shino Miyagino'	Rose Magneta, white anthers. (a)
'Hatsuki'	No description found.	'Shi no Ito'	Cream flushed lilac, lilac tips, brown spots.
'Hatsuoto'	Lilac blush. (b)	'Shi no Noe'	Pale greenish white, pink margins.
'Hikkasen'	Pale salmon, pink centre, dark blotch.	'Shi no Uye'	White, slight chestnut brown spots.
'Hino Tsukasa'	Deep scarlet red. (b)	'Shinsagino Kagasane'	Pale rose madder, pale throat, crimson spots.
'Hinode no Kumo'	Rich crimson.	'Shjuchuke'	No description found. (d)
'Ima Zuma'	Pale lilac rose, deeper edges, faint red spots.	'Soroi'	White, flushed and edged rose madder.
'Ishiyama'	Creamy white, broad lilac border.	'Susuganioto'	Deep rose pink, red anthers.
'Itten'	Pale lavender.	'Takamakie'	White, with greenish eye.
'Iwato Kagami'	Pale pink. (e)	'Tokoharu'	White, deep crimson striping. (a) (e)
'Izumi Gawa'	Rose lilac, pale throat, reddish spots .	'Tonkonatsu'	Pure white. (b)
'Jukachi Ko'	Salmon red, bright red anthers.	'Toun'	White, faint flesh tints, chestnut brown spots.
'Keinohana'	Deep lilac pink, white anthers.	'Unma'	No description found.
'Kinjo no Tama'	Deep rose pink, rose red anthers.	'Usugukari'	White, rose lilac edges, white anthers. (b)
'Kodai Nishiki'	White. (a)	'Wakalia'	Salmon orange, pale anthers.
'Kogasane'	Soft carmine, deep band down petal centre. (f)	'Yezo Nishiki'	Creamy white, deeper throat, white anthers.
'Kojo no Odorikaraka'	Vivid tomato red.	'Yoro'	White, no spots.
'Kokinran'	Flesh pink, white throat, carmine spots.	'Yoshi Migatake'	Bright rose madder, large ragged calyx.
'Komachi'	Pale pink, rose lilac edges, brown spots.	'Yozakura'	Pale magenta. (b) (f)
		'Yugire'	Lilac pink. (b)
		'Yukachiko'	Salmon red, bright red anthers. (g)

- Notes : (a) Hose-in-hose variety.
 (b) Large flowers.
 (c) Very similar to 'Kojo no Odorikarake'.
 (d) Listed in 1958 by IRR, but the spelling probably incorrect.
 (e) A plant with a similar name was introduced to California by Domoto Brothers c. 1918, but it may not be the same plant as that in Britain.
 (f) A plant with a similar name was re-introduced by USDA in 1929, but it may not be the same plant as that in Britain.
 (g) Synonym of 'Jukachi Ko.'

there is little point in removing any of these details from the registration records unless more specific information can be inserted. To suggest that the reader refer to Galle's records, which are incomplete and are inconsistent with the plant material that exists in Britain, is not a viable alternative.

In the author's view it is high time that the duplication of Japanese plant names, transliteration inconsistencies, and plant description variations were recognized by the International Cultivar Registration Authority (ICRA) in the same way as it has dealt with the duplication of English names; these variants, with all their known details, should be listed in *The International Rhododendron Register*. It is intended to revise the transliterated versions of Japanese epithets to bring them in line with the *International Code of Nomenclature for Cultivated Plants* (ICNCP).(6) This could be a disaster in horticultural terms, as it will only serve to exacerbate the confusion that already exists in the real world, unless both the original name under which the plant was introduced and the ICNCP revised name are listed together for reference purposes in the registration details so some correlation can be maintained with the original labelling of plants in gardens. Previous attempts to eradicate inconsistencies with names that are similar, or do not adhere to their expected format and spelling, have led to the current confused situation on both sides of the Atlantic as to what plant is actually being referred to when a particular name is used. This problem, coupled with the direct introduction into the United States of plants with similar names as those in Britain (but not necessarily the same plants that exist in Britain under those names), may well go a long way to explaining why Galle's listing does not correlate with the plants that Stevenson introduced. Many Japanese names are difficult for someone from the Western World to interpret. Take, for example, the Stevenson introduction 'Fuji no Asahi' ['Fuji-no-asahi'] whose meaning is said to be "Sunrise on Mount Fuji" and could be thought to relate to a plant with pink or reddish flowers; but, 'Fuji no Asahi' ['Fuji-no-asahi'] is white, flushed rosy lilac. A more precise translation by a Japanese interpreter is said to be "Sunrise on (snow-covered) Mount Fuji"; now the flower characteristics begin to make sense. Care needs to be taken that transliteration revisions do not alter the meaning of the original name given to a plant. Unfortunately, as far as records are concerned, there appears to be no single point of reference that provides a full listing of the "Stevenson's Collection" of Kurume azaleas and the details of their origin.

Some Thoughts About Cultivation and Hardiness

Some authorities in the United States recommend using little, if any, fertilizer on Kurumes. This may have more to do with avoiding feeding routines that could delay the onset of dormancy in colder areas of the East Coast rather than with the actual nourishment required by the plant. In Northern England, where the soil is often heavy clay, experience over many years suggests that a scattering of bone meal, and the application of a handful of magnesium sulphate dissolved in

a two-gallon bucket of water per four mature plants, applied when the new growth starts in the spring, is all that is required to maintain good looking specimens and avoid damage from the late spring and fall frosts. No adverse effects have been noted from the calcium content of the bone meal. Where bark or other forms of organic content have been added to the soil, an application of inorganic fertilizer will be needed to increase the nitrogen, but take care and apply sparingly until the correct dosage has been determined. In the author's garden an unexpected heavy frost one night in mid-November 2005, accompanied by an east wind, seared across the tops of the more exposed evergreen azaleas. Several plants lost most, or all, of their flower buds, and two plants were killed outright. Thankfully, as Roza Stevenson had predicted almost half a century ago, the Kurumes were undamaged.

In general terms the Kurume azaleas are not difficult to grow, very few are tender in the British climate, and experience suggests that they are resistant to bark-split. It is absolutely correct that several varieties of "Wilson's Fifty" can be lost in a bad winter, as can many other varieties of azaleas and rhododendrons. So, these Kurumes occasionally need to be replaced in gardens where full collections are held; however, this is not a problem that needs to be handled by the average enthusiast, as these varieties are not readily available in the trade in Britain. For the record these are:

- #6 'Tancho', flesh colored.
- #7 'Hachika-tsugi', white, suffused with lavender.
- #10 'Sui-yohi', flesh-colored.
- #13 'Bijinsui', pale pink.
- #17 'Osaraku', white, suffused and margined with lavender.

For further details see the hardiness report by Francis Hanger.(7) This report also provides a useful listing of "Wilson's Fifty" by number and name; it also notes that whereas young plants are susceptible to winter damage, mature plants are hardy. No hardiness problems have been recorded with the collection of Kurumes that Stevenson introduced, despite their having endured ten particularly severe winters since their arrival in Britain (1928-29, 1940, 1941, 1942, 1947, 1954, 1956, 1961, 1962-63, and 1981). In other words, they are much hardier than some reports would suggest.

From the Lake District in the North to Cornwall in Southwest England the collections of Kurumes established over the past 80 years or so have performed reasonably well despite the impact of WWII on gardens and the difficult times that followed the cessation of hostilities. Those in the author's garden, a windy, exposed location in Northern England on the edge of the West Pennine Moors, have also performed well when grown in full sun, as they did at the author's previous home that was also an exposed location a few miles to the south. There are suggestions that Kurumes do not perform as well north of the border, but this may be

Please see KURUME on page 92.

Using Beneficial Nematodes to Control Black Vine Weevil and Rhododendron Borer

Stanton Gill—Ellicott City, Maryland

Rhododendron borer (*Synanthedon rhododendri*) and the black vine weevil (*Othioranchus sulcatus*) are two major pests of rhododendron. Research conducted by the University of Maryland Cooperative Extension has shown that these pests can be greatly reduced in number by using entomopathogenic nematodes. Our work was conducted over several years at the Central Maryland Research and Education Center and at commercial nurseries.

Rhododendron Borer

Early symptoms of damage from rhododendron borer appear like drought stress with foliage loss and color dying back. This clearwing moth borer, a member of the family Sesiidae, damages rhododendrons, azaleas, and mountain laurel. The female moth lays eggs at the base of branches or near the crown of the plant. On close examination frass may be found being expelled from the holes as the larvae excavate a gallery. The borer has a one year life cycle with the larvae being present in the plant for about 11 months of the year. Adults emerge in mid-summer, mate, and then females lay eggs on susceptible plants. The larval stage is susceptible to entomopathogenic nematodes.



▲ Adult Rhododendron Borer

A traditional control for insects boring in plants such as rhododendrons is the application of broad spectrum chemical insecticides applied to the trunk and branches just before the borer eggs hatch. Insecticidal bark sprays are effective only if a lethal residue is present during the brief interval between the time when larvae hatch and before the larvae enter the tree.

The use of pheromone traps has made timing applications of synthetic insecticides more efficient (1, 8, 9). Unfortunately, pheromone traps are under utilized by many people, and pesticide applications are often made on predetermined schedules. This approach can result in borer larvae successfully penetrating the bark before a pesticide application is made or after the chemical has broken down to a sub-lethal level. Once the larvae are under the bark, pest control options are severely limited.

Black Vine Weevil

The flightless black vine weevil damages rhododendrons, yews, and many herbaceous perennials. The adult weevils, which all are females, are active in mid-summer and feed on the margins of leaves, leaving a characteristic notching of foliage. The females reproduce parthenogenetically and lay eggs into the soil. The larva is a legless grub with a white body and red head capsule. The larvae, present in the soil 10-11 months of the year, feed on roots and at the base of plants, causing girdling of rhododendron plants with resulting death. Soil drench insecticides such as imidacloprid have provided good levels of control but some rhododendron enthusiasts wish to use a biological control, over an insecticide. Fortunately, the larvae of black vine weevil are susceptible to entomopathogenic nematodes.



▲ Black Vine Weevil Adult and Larva

Beneficial Nematodes

An alternative control method for dealing with borers and ground infesting weevil larvae is through the use of entomopathogenic nematodes (5). Entomopathogenic nematodes infect only insects or related arthropods. As a biological control agent, entomopathogenic nematodes offer two major advantages. In the case of rhododendron borer, the first is their ability to attack borer larvae after they have entered the plant. The second advantage is that nematodes are safe for the pesticide applicator and have no adverse impact on non-target sites (10). In the case of black vine weevil the larvae provide a safe alternative for people wishing to avoid use of synthetic chemical applications.

Several commercial companies are marketing nematodes for use in controlling insects in the landscape and nursery. These products contain infective juvenile nematodes in the "dauer" or J-3 stage and are formulated for applications as sprays or drenches. The J-3 stage nematodes enter through the mouth, anus, or breathing tubes (spiracles) of the insect (2). After penetrating the insect, the nematodes release bacteria that enter the insect's blood stream. The nematodes then feed on these bacteria as they multiply and the insect dies of bacterial septicemia. These entomopathogenic nematodes and their associated bacteria, *Xenorhabdus nematophilus* and *X. luminescens*, have been extensively



▲ Rhododendron Borer damage to a rhododendron.
▼ Close up of Rhododendron Borer damage.



tested for toxicity to non-target organisms, and they are considered to be nontoxic and nonpathogenic to plants and mammals (10).

Beneficial nematodes are microscopic, but their benefit to growers and plant enthusiasts is sizable. These nematodes feed within insects, releasing bacteria in their fecal waste that causes the insect to become sickened and die. The entomological term for this is “entomopathogenic,” and these beneficial nematodes are referred to as entomopathogenic nematodes. Entomopathogenic nematodes infect only insects or related arthropods. Entomopathogenic nematodes are exceptionally lethal to many soil and cryptic insect pests, yet pose no danger to plants and animals. Entomopathogenic nematodes kill insects by entering through a body opening such as the insects’ mouth, spiracles, or anus and releasing a bacterium. In the case of *Heterorhabditis* species, the structure of the strong head allows it to enter through the host’s soft, sidewall tissue.

Only the third instar juvenile of this nematode is capable of entering insects. If the environment is warm (50–85° F [10–30° C]) and moist, these nematodes will complete their life cycle within the infected insect. Using entomopathogenic nematodes is ideal for control of insects that have life stages in soil.

Once the nematode is inside the insect, the nematode sheds a protective cuticle and begins feeding and defecating. A symbiotic bacterium lives inside the nematode and is excreted in its waste material. The nematode’s feeding does not kill the insect, but the bacterium it excretes does. The bacterium also contributes anti-immune proteins to assist the nematode in overcoming host defenses. The bacterium in the fecal waste of *Heterorhabditis bacteriophora* nematodes is *Photorhabdus luminescens*; the steinernematid nematodes release *Xenorhabdus nematophilus* bacterium. The insect dies of bacterial septicemia in 24 to 48 hours.

The nematode’s life span is six to eight weeks for *H. bacteriophora* and 12-15 weeks for *Steinernema carpocapsae*. The nematodes progress through four immature stages called J-1, J-2, J-3, and J-4, before reaching adulthood. The first two J-stages are spent usually inside the host (in vivo), but when they hit the J-3 stage they search for prey. The J-4 stage and adulthood is spent inside the host. Their life cycle cannot progress beyond J-3 until they find a new host. The conditions for optimum success with most species of steinernematid and heterorhabditid entomopathogenic nematodes are when soil temperatures are 60 to 70° F (16 to 21° C) and the soil is slightly moist. *H. bacteriophora* are active at low soil temperatures of 45° F (7° C), but the *Photorhabdus* bacterium inside the nematode requires higher temperatures, usually of 60° F or greater to break dormancy. *Steinernema* spp. show some activity at low temperature of 40° F (4° C), but the *Xenorhabdus* bacterium generally needs temperatures above 55° F (13° C) to break dormancy. If the nematodes are placed into the soil when the pest is active, the bacterium will become active when

the minimum temperature is reached. Nematodes such as steinernematids can generally be maintained for six to fifteen weeks. Shorter performance is influenced by the soil media drying out or the nematodes' being exposed to ultraviolet light, which is not likely in most container production. Cooler and warmer temperatures and insufficient moisture levels in the soil will hamper development and reproduction to a certain degree.

Nematodes such as *S. carpocapsae* sit and wait for prey, standing on their tail and nictating (wiggling) until prey moves close, when they respond quickly to carbon dioxide given off by the host insect. Other nematodes such as *S. glaseri*, and *Heterorhabditis bacteriophora* are highly mobile and actively searching for host insects.

Small bio-technical companies are producing and marketing a variety of nematodes, and many "cottage" industries have grown up to supply growers' needs. A list of suppliers of beneficial nematodes is provided at the end of this article. Marketing of entomopathogenic nematodes has focused on *Steinernema* and *Heterorhabditis spp.* *Steinernema spp.* occur most commonly in the soil, are generally easier to rear on artificial media, and tend to be more persistent after application. The *Steinernema* nematodes are best suited to control soil pests commonly found in the top 1-2 inches of the media or for control of clearwing moth borers. *Heterorhabditis spp.* are usually more mobile and have superior host-searching activity; they are the nematode of choice for insects that inhabit deeper regions of the soil profile, such as black vine weevil and scarab beetles. Several of the *Heterorhabditis spp.* nematodes have been labeled "Cruisers" since they cruise about in search for their insect prey.

When a susceptible host is located, the infective nematodes enter the insect's body through natural openings such as the mouth, spiracles, and anus. There, they feed and release bacteria, which live symbiotically in the gut of the nematode. The bacteria rapidly multiply, killing the insect. The nematodes will then reproduce and colonize the cadaver. Once the food supply is exhausted, thousands of infective stages leave the insect's body and return to the soil in search of additional host larvae. Host death occurs within 27-72 hours of host penetration, depending on the nematode and pest species, and ambient conditions.

Nematodes are commonly formulated as slurries, water dispersible granules within an inert clay carrier, gels, or in sponges. All need to be soaked to release nematodes into suspension and to ensure their rehydration and "activation."

Of the nearly 30 steinernematid and heterorhabditid nematodes identified to date, seven species are commercially available. When purchasing nematodes a comparison-shopping approach is recommended as prices vary greatly among suppliers. One billion nematodes per acre is the rule of thumb against most soil insects such as fungus gnat larvae, black vine weevil, and scarab beetle larvae. Rates for containerized plant material tend to be treated at slightly higher rates.

Steinernema carpocapsae

S. carpocapsae is the first nematode that we started testing in Maryland back in the late 1980's. It is easy to mass rear and can be formulated in a partially desiccated state that provides several months of room-temperature shelf life. This nematode stands on its tail in an upright position and attaches to passing hosts. They are highly responsive to carbon dioxide once a host has been contacted. The nematodes generally enter through the insect's spiracles. The nematodes are most effective at temperatures ranging from 70 – 85 F. *S. Carpocapsae* has been effectively used for dogwood borers, banded ash clearwing borer, lilac borer, oak borer, rhododendron borer, and peach tree borer larvae. It has also been used for cutworm control and armyworms.

Steinernema kushidai

This is the new kid on the block. This nematode was isolated in Japan and has shown to be a very effective parasite of scarab beetle larvae such as Japanese beetle and oriental beetle larvae. If the companies can resolve how to mass reproduce this nematode, you should see it on the market in a couple of years.

Phasmarbditis hermaphrodita

This is a nematode that causes mortality on a wide range of slugs and snails, but it is harmless to other invertebrates. It can be readily reared in culture, formulated and stored for use as a biocontrol agent. The nematode enters the dorsal pore, just behind the mantle on slugs, and once inside caused the slug to swell up and die rapidly. This nematode is labeled in England and distributed by MicroBio. We would love to test this nematode in Maryland, but this species has to be found existing naturally in our state before it can be imported from the United Kingdom.

Heterorhabditis bacteriophora

This nematode is fairly versatile, attacking lepidopterous (moths and butterflies) and Coleopterous (beetle) larvae, among other insects. This nematode species is labeled a "cruiser" that actively searches for its prey. The best control we have obtained with this species has been against black vine weevil larvae in container grown plants. The only drawback is this nematode needs warm soil temperatures of at least 50 F and has shown reduced efficacy at temperatures below 70 F. Shelf life of this nematode species is a problem and nematodes that are shipped to a nursery should be used shortly after arriving. If they must be stored, refrigerating will keep them for two to three months. Most infective juveniles persist only a few days following a release in field conditions. This nematode species is the most sensitive among entomopathogenic nematodes to physical stress.

Nematodes are usually applied to the soil by drenching, using coarse sprays and even overhead irrigation systems. The goal is to distribute them evenly over and through the media. Once in the soil, nematodes begin to search for a suitable host. While the nematodes can move to reach a host,

Suppliers of Entomopathogenic Nematodes

Beneficial Insect Company
244 Forrest Street, Fort Mill, SC 29715.
BioLogic Company
P.O. Box 177, Willow Hill, PA 17271
Bioshield
P.O. Box 9068, Fresno, CA 93790
Bountiful Gardens
18001 Shafer Ranch Rd, Willits, CA 95490
Bozeman Bio-Tech
P.O. Box 3146, Bozeman, MT 59772
Crop King, Inc.
P.O. Box, Medina, OH 44258
Ecogen Inc
2005 Cabot Boulevard West,
Langhorne, PA 19047-1810
Gardener's Supply Company
128 Intervale Road, Burlington, VT 05401
Green Spot, Department of Bio-Ingenuity
93 Priest Road, Nottingham, NH 03825
Harmony Farm Supply
P.O. Box 460, Graton, CA 95444
Hydro-Gardens, Inc.
P.O. Box 25845, Colorado Springs, CO 80936
MicroBio
17 Street, Whittlesford, Cambridge CB2 4LT,
England. Sold through E.C. Geiger, Box 285,
Route 63, Harleysville, PA 19438-0332

the distances they can move are limited, so placement in the vicinity of the target pest(s) will promote parasitization and control. The soil must be kept moist to allow the nematodes to move, but should not be over watered as this will wash the nematodes from the "target zone." If the soil dries, nematodes can die through desiccation, or they will not be able to move in search of a suitable host.

Most nematodes can be satisfactorily stored under refrigeration for some time prior to use. The length of time varies according to their method of production and formulation. Typically, nematodes are either produced on an artificial diet (*in vitro*) or in an insect host (*in vivo*). Those produced *in vitro* are often formulated in a dormant state that can be stored for up to six months without any loss of viability. Such products need to be "re-activated" prior to application (see list). Nematodes produced *in vivo* may be stored for two to three months without any problems, living off fat reserves; healthy nematodes will not be unaffected but the initial pre-storage health of the shipment should be confirmed.

Used correctly, these biocontrol agents are highly effective management tools, providing control as effective as, as cost-comparable to, conventional chemical treatments. Nematodes are available for greenhouses and nurseries, and have been successfully used in a wide variety of media, including soil, peat-lite mixes, bark products, and rockwool. For example, in trials run in Maryland, fungus gnat control

in a poinsettia crop with *S. feltiae* was as effective as that obtained using Knox-Out®.

Detailed recommendations on dose and use are generally provided with each shipment of nematodes or can be readily obtained by contacting the producer or supplier. Applications must be made when susceptible stages of the target pest are present; if multiple and overlapping generations occur, susceptible stages will always be present and several applications will be required to bring the pest population under control. Otherwise, applications must be made at specific times to target susceptible developmental stages during the pest's life cycle.

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The “Rhododendron” Horticultural Society— The Symbiotic Relationship Between the Royal Horticultural Society and the Genus *Rhododendron*

Jim Gardiner—Curator, RHS Garden, Wisley, Surrey, United Kingdom

Editor’s Note: This article is based on Jim’s keynote presentation, May 14, 2006, at the joint ARS/ASA national convention in Rockville, Maryland.

Background

The origins of the Royal Horticultural Society (RHS) can be traced back to 1804. On 7 March of that year, under the chairmanship of John Wedgwood, son of the famous potter, six other gentlemen including Sir Joseph Banks, president of the Royal Society, William Forsyth of Kensington and St. James’, William Aiton of Kew, nurseryman James Dickson and two amateurs, Charles Greville and Richard Salisbury, met at James Hatchard’s book shop to establish what we know today as the RHS.

My responsibility is the great garden at Wisley in Surrey, southwest of London. However, it was not the society’s first garden. In 1821, the society leased 33 acres of ground adjoining Chiswick House from the Duke of Devonshire. It became a repository for plants introduced from China and the Americas by the society’s collectors, David Douglas, John Reeves, Robert Fortune, and Theodore Hartweg. It was in the same year that John Lindley was appointed as Assistant Secretary. He was an extraordinarily busy man. Not only did he have numerous jobs within the RHS but he was also Professor of Botany at University College London and the Chelsea Physic Garden and editor of the *Gardener’s Chronicle*!

In 1848 he published an account of the rhododendrons of Borneo. This paper was in response to a paper published by Carl Blume—a medical doctor who traveled widely in Borneo and Java, who in 1826 published an account of five species of rhododendron allies from S. E. Asia, named in honor of a French pharmacist friend, Vireya. It was never accepted as a botanical name, but is used loosely as a common reference for Malesian rhododendrons.

Lindley firmly rejected the genus Vireya and reported on Sir Hugh Low’s findings that Vireyas were “perhaps the most gorgeous of native plants.” He also questioned their ability to be cultivated successfully. So Lindley may well have stimulated the likes of Veitch to send Thomas Lobb to S. E. Asia. He eventually brought back the first Vireyas into cultivation. *Rhododendron javanicum*, quickly followed by *R. jasminiflorum*, were introduced, with the latter exhibited at Chiswick in 1850, where it was reported “that few plants excited greater attention among the visitors most distinguished for taste and judgment.”

During the 1850s the society’s attentions turned to creating another garden closer to the centre of London at

Kensington. This was made as a show garden for flower shows, while Chiswick became an experimental garden. Queen Victoria’s husband, Prince Albert, who was President of the society, was instrumental in the lease of 22 acres of land immediately to the south of where the current Albert Hall is today. The garden opened in 1861.

It proved very costly to run, and following the Prince’s death enthusiasm for the garden declined, and it eventually closed in 1888. Following its closure, it was agreed that the Chiswick garden should continue as a school of scientific and practical horticulture—both ornamental as well as useful.

By the end of the 19th century, Chiswick was considered to be too small and too polluted, so the hunt was on to find another garden.

Before talking about Wisley, I shall mention where the RHS is today with its four gardens and partner gardens:

RHS Harlow Carr, in Yorkshire, is the newest and most northerly of the four gardens, covering 60 acres. The RHS merged with the Northern Horticultural Society in 2001 and with the merger, acquired Harlow Carr. The Northern Horticultural Society was founded in 1946 with the objective of “promoting and developing the science, art and practice of horticulture with special reference to the conditions pertaining to the North of England” and is in an ideal location to view what can be grown successfully in the area.

RHS Hyde Hall is situated in the heart of Essex farmland in the southeast, only 40 miles from London. It has countryside views rarely associated with this part of England. Hyde Hall was donated to the society in 1993 by Dr. Richard (Dick) and Helen Robinson. Nearly 40 years of work has brought it from a windswept hill with just six mature trees to the present-day garden of 24 acres.

RHS Rosemoor is situated in the southwest county of Devon. Lady Anne Berry gifted Rosemoor to the RHS 11 years ago, since when the original eight acres have been greatly developed. Recent additions include Mediterranean and semi-tropical plants, which have been thriving during the recent long hot summers, and the newly planted Winter Garden. But what is perhaps the most popular feature of this delightful garden is the extensive rose garden, proving beyond doubt the lie that the West Country cannot produce beautiful roses.

Individual RHS members also have free admission to a wide range of outstanding and inspirational partner gardens numbering about 120 around the United Kingdom (UK).

RHS Wisley

In 1903, after many years of searching for a larger garden “beyond the radius of the London smoke” to replace the garden at Chiswick, Sir Thomas Hanbury, a wealthy Quaker and founder of the celebrated garden of La Mortola on the Italian Riviera, presented in trust to the society 60 acres of freehold land at Wisley in Surrey. At that time, the society was committed to building a new exhibition hall and offices in Vincent Square (the construction work had already started), but there were heated arguments among the Fellows over whether the hall or a new garden should have priority for the available funds. Sir Thomas’ generous donation appeared to have come “out of the blue” and solved both problems at a stroke. By May 1904 the move from Chiswick to Wisley was complete; and, in July, the new headquarters at Vincent Square was officially opened by King Edward VII—both in time to mark the centenary of the RHS.

There is an expression “if it can grow at Wisley, then it can grow anywhere.” Our plant collection here is one of the largest in the world, with more than 25,000 taxa. What makes it unique is its diversity. Nowhere else can you find one of the most comprehensive collections of fruit growing alongside glasshouse plants, alpiners, and vegetables, as well as the conventional collections of bulbs, herbaceous and woody plants.

Yet it is far more than just a collection of plants, it is a source of inspiration. The Broad Walk provides gardening on the grand scale with 125 yards of mixed border plants where you can become immersed in plant associations: the alpine display houses, where alpiners in flower can be seen every day of the year; the demonstration gardens, where you can find examples of a similar scale to your own; or the Bicentenary Glasshouse and Learning Centre (opening 2007), where you can walk through 3,000 square yards of landscaped display.

Wisley is also a teaching garden where people of all ages learn horticultural skills. Each year, students from around the world join our training program to study for the Wisley Diploma in Practical Horticulture or specialist option certificates. Working alongside trained staff provides the appropriate practical skills necessary for their future careers. These skills are also passed on to RHS members, who benefit from attending horticultural demonstrations and garden walks covering a diversity of topics. Children and their teachers visit to learn all about plants and gardening.

There are two main areas in Wisley where rhododendrons are cultivated, in the Wild Garden and on Battleston Hill. The Wild Garden was formerly known as Oakwood when George Fergusson Wilson cultivated the area. He wanted to develop it as a wild garden and enlisted the help of William Robinson, the famous garden author and journalist, who lived at Gravetye Manor in Sussex. He was keen to develop it as a spring garden with a rich woodland floor of *Trillium*, *Lilium*, *Erythronium*, *Primula*, *Gaultheria*, and a host of smaller woodland aristocrats. It is low lying but has a high water table, which creates advantages and disadvantages. On the margins of the garden can be found large specimens of

old rhododendron hybrids, including ‘Pink Pearl’ and ‘White Pearl’, as well as many of the later flowering Exbury hybrids. The shrub zone includes an excitement of ericaceous plants: *Kalmia*, *Enkianthus*, and also a huge specimen of the Kurume azalea ‘Amoenum’, which has been partly under planted with *Paeonia emodi*. *R. viscosum* and *R. atlanticum* extend the flowering season—and the scent—well into summer.

By far the largest site for growing rhododendrons is on Battleston Hill. It was acquired by the RHS in 1936 and covers approximately 26 acres. The Mixed Border runs roughly north/south, which draws the eye to the Queen Elizabeth Border, the Queen Mother Border, and the highest point of the garden, which forms a ridge that runs roughly east/west.

The emphasis is to display a balanced collection primarily of rhododendron hybrids. However, there are also small specialist collections of recent and reintroduced species. We can thank the Rhododendron, Camellia, and Magnolia Group for sponsoring a collection of recent and reintroduced species, which has plants collected by Cox and Hutchinson, Rushforth, McBeath, Millais, and others. The Group also sponsored a collection of Rustica Flore Pleno rhododendrons that were planted in memory of Alan Hardy.

The entire plant collection at Wisley numbers more than 25,000 taxa, of which 1,700 are *Rhododendron*. This enables us to display a limited collection of tender species and hybrids under glass, dwarves in the Rock Garden, as well as mainstream/complementary and structure plants in association with other woody, herbaceous, and bulbous plants in the Wild Garden and on Battleston Hill.

The most recent changes have been seen during the past 10 years, following the storms of 1987 and 1990.

Plant Trial Program

The main reason behind the purchase of the ground was to bring rhododendron trials to Wisley from Exbury. Plant trials have always been a cornerstone of the society’s activities, with rhododendrons being just one of 60 plant trials conducted each year.

Trials of seed-raised annuals, vegetables, perennials, glasshouse plants, bulbs, alpiners, and woody plants are assessed by 13 Standing and Joint Committees. These committees are composed of people who the society recognizes as having a huge practical and botanical knowledge of the plants they are being asked to judge.

They may be from the horticultural industry at large or from those growing plants in their own garden for a hobby.

This “intellectual property” is of enormous value to us. As well as asking these committees to judge plants during the period of interest, they also make recommendations on which plant trials we should be looking at in the future.

For instance, in the 1990s there were trials for *Penstemon*, *Osteospermum*, and *Diascia* and with the appropriate publicity were widely grown by the gardening public.

It is also important to draw together entries from as far afield as possible. Linda Jones and her colleagues in

the Trials Office are responsible for scouring the plant and seed catalogues of the world for entries so that when planted they are seen as comprehensive and not just reflecting what is currently available in the UK today. These are advertised in *The Garden* magazine and on our web site three years in advance of each trial to enable entries to be gathered together.

In the past there have been a number of awards to plants, which, unless you are in the know, can be bewildering. Preliminary Commendation, Award of Merit (AM), and a First Class Certificate (FCC) were available. However, in 1992 the Award of Garden Merit (AGM) was relaunched, producing at a stroke one award with which the gardening public could readily identify.

The AGM is the plant's kitemark of quality, being awarded to plants that have the following attributes: (1) outstanding excellence for garden decoration or use; (2) available in the trade; (3) good constitution and; (4) requires neither highly specialist growing conditions nor care.

When judging plants over the course of a season, or indeed over several seasons, each committee takes a three-step approach: A, AG, and AGM.

A = A plant considered to have AGM qualities during its first assessment or first year of assessment.

AG = A plant considered to have AGM qualities during its second assessment or second year of assessment.

AGM = Confirmation of the Award of Garden Merit.

Please note that a plant with an A or AG may not achieve an AGM, as it may not perform consistently. When plants are assessed throughout the course of the judging season, they should be seen to perform well and consistently, hence the three-step approach.

Every plant that has the AGM is given a hardiness rating, which admittedly is more easily achieved in the UK than the USA, but we too have our challenges.

H1 Heated glass

H2 Unheated glass

H3 Hardy outside in some regions or particular situations at which, while usually grown outside in the summer, need frost-free protection in winter (e.g. *Dahlia*)

H4 Hardy throughout the British Isles

H1-2 Between H1 and H2

H2-3 Between H2 and H3

H3-4 Between H3 and H4

Focussing down onto rhododendrons, they receive AGMs either after trial at Wisley or by committees deliberating at round-table meetings. How did trials of rhododendrons arrive at Wisley? To understand this, it is worthwhile stepping back in time to 1915.

History of Rhododendron Trials at Wisley

When Charles Eley of East Bergholt in Suffolk visited his friend P. D. Williams of Lanarth in Cornwall in 1915, it was suggested that they form the Rhododendron Society, with Williams proposing Eley as the Honorary Secretary. It

was formed with minimum organization, with J. C. Williams (of Caerhays) as Chairman.

The founding members were P. D. Williams, Eley, and J. G. Millais of Compton Brow, Horsham. As well as inviting notable garden owners from various corners of the British Isles to join, Professor Isaac Bayley Balfour, W. J. Bean, Ernest Wilson, and George Forrest were elected as honorary members.

The Rhododendron Society *Notes* were published from 1916. As it was mandatory for members to write, the notes were highly informative. They also organized the first Rhododendron Show in 1926, filling the RHS Hall at Vincent Square. The show was considered a huge success and was repeated the following year, but it did not attain the high standards of the previous year, due in part to a severe frost that taxed many of the exhibitors.

In 1927 under the chairmanship of Lionel de Rothschild, the Rhododendron Association was formed, which enabled a larger number of interested people to take part in promoting rhododendrons. The Association published Year Books between 1929 and 1939 containing lists of species, expedition numbers, the stud book on hybrids as well as the establishment of plant trials of hardy hybrids introduced since 1918, to be conducted at Exbury.

Requests were sent to nurserymen to enter one specimen of each plant for trial. A Joint Committee, composed of RHS and the Rhododendron Association members, was empowered to inspect plants and make recommendations for awards. These were planted in open ground adjacent to woodland to the north of Exbury House. During the first and second years, the committee made several visits with the first awards being recommended after their visit during the first week of June in 1933—one FCC and 14 AMs were proposed. The following year invitations were extended to Dutch nurseries.

In 1938 Mr. de Rothschild proposed that the Rhododendron Trial be relocated to Wisley, on the north-facing slope of Battleston Hill. Never having been cultivated in the strict sense before, this was no light task, with Scots pine and chestnut to be felled, old stumps excavated, and the dense undergrowth of bracken and bramble cleared. Yet by 1940, the committee met for the first time with six varieties recommended for AM.

No further meetings took place until 1945, when deciduous and evergreen azalea trials were conducted.

With the arrival of Francis Hanger as Curator at Wisley from Exbury, a new phase in rhododendron cultivation and introduction took place. Hanger coordinated the introduction of rhododendrons from Lord Aberconway at Bodnant, Edmund de Rothschild at Exbury, Royal Botanic Garden Kew, J. C. Williams at Caerhays, Sir Giles Loder at Leonardslee, and J. B. Stevenson at Tower Court.

On the morning of 23 November 1946 we read that "the Curator with a bus load of students and trainees together with two lorries set off on the 16-mile trip to Tower Court near Ascot to collect the gift of more than 150 species totally some 300 plants, including some large specimens up to 10'

in height.” Over the three days they worked lifting the plants which “everyone found very enjoyable despite the continuous fine rain.”

Hanger had a good eye for plants, favouring primary crosses between species; however, primary hybrids themselves open doors for interesting possibilities. ‘Beefeater’ was a back cross using *R. elliotii* with *R. ‘Fusilier’*, a *griersonianum x elliotii* hybrid.

Hanger quotes the advantages: “It must be remembered that trusses of *R. elliotii* are very full with many more flowers per truss than *R. griersonianum*, and when the two are mated it is highly probable that the resulting hybrid will carry lax trusses with fewer flowers, but back-crossing rectifies this fault and improved the color, making a truer intensified red.”

Hanger also saw the huge value of *R. yakushimanum* as a parent. By using it as a seed parent he considered the progeny would retain the dwarf compact habit and flower from a very early age. First introduced by Lionel de Rothschild to Exbury in 1934, Hanger brought one of the two plants with him to Wisley. This was subsequently awarded a First Class Certificate when exhibited at Chelsea in 1947. Hanger described how it was planted on Battleston in 1945 and had outgrown the Exbury plant due to a “liberal supply of spent hops and water.” When seen at Chelsea, Hanger reported that “its white flowers commanded appreciation, however, if it had been seen a week earlier, it would have been more beautiful as the buds of the upstanding compact trusses were rich pink, fading to a pale pink as they developed to be finally pure white when opened.” The FCC clone is known as ‘Koichiro Wada’ after the source of this and many other plants from Wada’s Hakoneya Nurseries in Japan.

Hanger successfully bred *R. yakushimanum* hybrids with *R. ‘Tequila Sunrise’* (*R. yakushimanum x ‘Borde Hill’*) in 1951 and *R. ‘Renoir’* (*‘Pauline’ x yakushimanum*) in 1951. ‘Borde Hill’ is a Doncaster cross and ‘Pauline’ is an unknown raised by Lowinsky. Also, over the years Windsor, Waterers, Arthur George of Hydon Nurseries, Harkwood Acres, Peter Cox, Ken Janeck, David Leach, and Hans Hachmann have all focussed on *R. yakushimanum* to produce plants that are of excellence not only for their flowering quality but also for their foliage value.

In the late 1990s the late John Bond proposed the establishment of a new Trials Committee, the Woody Plant Trials Sub-Committee, to take a fresh look on trials. In 1996 a trial, which contained about 120 cultivars of *R. yakushimanum* hybrids was planted in an attempt to kick start the interest among the gardening public. This was to:

- Assess and compare old and new cultivars and nominate outstanding performers for the AGM.
- Assess the performance between differently propagated plants of the same cultivar, whether micro-propagated, grafted, or from cuttings.
- Make a permanent record through herbarium specimens, photographs, and written descriptions for the RHS Horticultural Herbarium at Wisley.

With the range of experts drawn together, an assessment

would be thorough in the current period and in the coming years, with a 10-year trial being proposed.

There is no obvious distinction on how micro-propagated vs. grafted vs. cuttings-raised plants once established differ in their performance. Initially, however, grafted plants of ‘Hachmann’s Marlis’ were flowering earlier than cuttings-raised plants, and cuttings-raised plants of ‘Babette’ were more floriferous.

The judging notes are valuable, not only for the vast reservoir of flowering data, growth responses etc., but also judges’ poetic prose – “good doer, flowers, nice shape, dies prettily; good head of flower; not a pretty flower; sugar plum fairy in boots; flower color a bit bright, would walk out of any good garden centre.”

The final judging of this 10-year trial is now complete, with 28 of the 134 entries being judged as Award of Garden Merit standard. They are a mixture of plants that have been widely available for many years, with the more recently introduced hybrids primarily from Hachmann. For a complete list, please refer to: www.rhs.org.uk/plant_trials.asp.

Other RHS Support for the Genus *Rhododendron* Genetic Assessment

During the late 1940s the RHS employed Dr. E. K. Janaki Ammal, an Indian geneticist, to make an assessment of chromosome numbers on a variety of woody plants, including *Rhododendron*. More than 360 species were taken, primarily from the newly established collections on Battleston Hill, but also from the Royal Botanic Gardens of Kew and Edinburgh, Lord Aberconway’s garden at Bodnant, and J. B. Stevenson’s garden at Tower Court. The work highlighted that, with one exception, all the elepidote (156 species) were diploid ($2n = 26$). (*R. diaprepes* from Tower Court was the one exception). When the lepidotes were examined, 78 were found to be polyploid (1/3 of the species counted). Polyploidy ranged from triploids ($2n = 39$) to dodecaploids ($2n = 156$). For those of you who are not familiar with the work, her papers were published in the *Rhododendron Association Year Book* of 1950.

International Rhododendron Registration

In 1955 at the 14th International Horticultural Congress at Scheveningen in the Netherlands, the RHS was appointed the International Cultivar Registration Authority for *Rhododendron* and by 1958 the first International Rhododendron Register had been published. Rhododendron and azalea growers had to a large extent shaped the form and content of this Register. In the Rhododendron Society notes for 1926 H. D. McClaren and E. N. Wilding published a “list of Rhododendron hybrids that have flowered and have been named and of which the parentage can be traced back to the species on both sides.” This consisted of a list of more than 100 names, excluding Vireya and Azalea.

In 1929 the Rhododendron Association *Year Book* contained a “list of Hybrid Rhododendrons compiled from the lists of principal nursery gardeners.” The list had expanded

to 600 names. In 1945 the Rhododendron Association became the Rhododendron Group of the RHS, with its first *Year Book* being published in 1946. The new *Rhododendron Handbook* came out in 1947. This contained a systematic account of *Rhododendron* species and collectors' numbers.

Much of the early work on the Register was carried out by Dr. Harold Fletcher, while he was Director at Wisley, followed by David Pycraft in 1970, and then Dr. Alan Leslie in 1983. It was Alan who was instrumental in ensuring the second edition of the Register and Checklist was printed. It comprises more than 28,000 entries for cultivar and group epithets, as well as the names of nearly 2,000 individuals or firms who have played a role in raising, naming or registration of these plants, including all azaleas, azaleodendrons, and vireyas. He has received considerable help from around the world, including the United States, Australia, New Zealand, Belgium, Germany and Japan, as well as numerous colleagues in the United Kingdom.

Working hand in glove with the Registrar at Wisley is the Keeper of the Horticultural Herbarium, who holds in excess of 80,000 specimens and is dedicated to dealing with horticultural plants. Plant sources are from the RHS Gardens, RHS Plant Trials, Flower Shows, and from specialist National Collections under the National Council for the Conservation of Plants and Gardens (NCCPG) scheme. This was established "to conserve, document, promote and make available Britain and Ireland's rich biodiversity of garden plants for the benefit of everyone through horticulture, education, and science." New techniques are continuously developed, including the use of images, both digital and 35 mm., and the use of the RHS Colour Chart, and all improvements are added to the RHS Horticultural Database (BG Base™).

Nomenclatural Standards

An important development has been the concept of nomenclatural standards for new cultivars and the creation of standard portfolios. This information will help solve problems for the taxonomists of the future, with specimens being used in morphological, molecular, and DNA investigations.

Today there are more than 500 standards of *Rhododendron* cultivars, which can be found on the RHS Web site www.rhs.org.uk/research. This will give details of whether a standard is an image or pressed specimen with its dates and cross-references wherever possible.

RHS Colour Chart

The RHS is also responsible for the color chart. The first systematic color identification reference appeared in 1905 from the Société Française des Chrysanthemistes, but it wasn't until 1958 that the RHS published its own in strips fastened together with four fans (yellow to red; red-purple to blue; blue-green to yellow green; grey colored). The international significance led to attempts to harmonize the RHS Colour Chart with the Munsell and ISCC-NBS Color System.

In 1986 the RHS collaborated with the Flower Council of Holland on reprinting, as some of the pigments used earlier were no longer available. Since that time two further reprints have followed, also increasing the number to the 884. A quarter size chart has since been added.

Promotion and Management of Trials

It is important to promote trials. Inevitably the success of these trials is also down to effective publicity. Trial plans are begun three years ahead of planting as described above. Round table discussions between RHS staff and Trials Committee members take place to cover all the planning issues as listed below:

- Length of trial, planting date, age/size of plants, objective, judging criteria, records, specialist on the genus
- Cultivation – planting distance, arrangement, staking, pruning, deadheading
- Soil conditions, mulching, watering, fertilizer, and shading
- Propagation
- Pests and diseases
- Botany

For the specialist, the RHS is publishing Plant Trials and Awards (Salad Potatoes, *Miscanthus*, Perennial Yellow Daisies, *Delphinium*, *Spiraea japonica* (with colored leaves), *Canna*, Hardy Lavenders, Shrubby *Potentilla*, Hardy *Geranium*, Silver Saxifrage, *Hyacinthaceae* (little blue bulbs). So far, 11 have been published and can be ordered through the leaflets sent to the ARS/ASA convention or through the main RHS Web site.

Specialist Group

The Rhododendron, Camellia and Magnolia Group of the Royal Horticultural Society have their own Web site at www.rhodogroup-rhs.org. This says: "Three groups of plants, one group of enthusiasts worldwide. As a member you can enjoy garden visits, seed distribution, programme of meetings, shows, year book (annually), and bulletin (3 times a year)."

"This is open to members of the RHS in the UK for a subscription of £15.00 or worldwide (£20.00). The site is an ever-expanding resource concerning the classification, cultivation, and care of plants in these three genera for enthusiasts at all levels of expertise."

Jim Gardiner is curator of the Royal Horticultural Society Garden at Wisley, England, a post he has held for more than 18 years. Prior to that, he trained at the Savill and Valley Gardens, Windsor; the University of Cambridge Botanic Garden; the Royal Botanic Garden, Edinburgh; and the City of Liverpool Botanic Garden. He also served as the curator of The Hillier Gardens and Arboretum. A sought-after speaker and prolific writer on all things horticultural, he is particularly noted for his expertise with magnolias. He was the President of the Magnolia Society International (www.magnoliasociety.org) for four years.

Chapter News

Ben Morrison Chapter

Bob Hobbs, Newsletter Editor

Bob McWhorter presented a slide show of his trip to New England at the October chapter meeting. Bob is a good flower photographer. He and his wife, Rosa, have a large azalea and rhododendron garden in Gambrills, Maryland. Bob is past president of the Ben Morrison Chapter.

Dallas Chapter

Submitted by Robert Lee

A productive meeting of the Dallas Chapter (Texas Chapter) was held on October 27 at 6:30 p.m. at the Forum of Civics Building of the River Oaks Garden Club in Houston. A new slate of officers was elected. **Bart Brechter** of Houston will be the new president. Dates and locations were tentatively set for future meetings which would encompass the greater East Texas area.

For additional information or if you have comments, please contact Bart Brechter at bbrechter@mfah.org.



▲ The Dallas Chapter (Texas Chapter) recently met in Houston. Pictured are Bart Brechter, president; Buddy Lee, ASA president; Barbara Stump, treasurer; Bill Bode; and Mike Stump.

Louisiana Chapter

Bill Bode, President

The Louisiana Chapter held its fall meeting at the Hammond Research Station on October 1. Chapter president **Bill Bode** announced that the Louisiana Chapter was now the largest ASA chapter with 110 members due to the largess of **Buddy Lee**, ASA president. Routine business followed.

Dr. Regina Bracy gave a presentation on the ceremony and festivity of the dedication of the "Margie Y. Jenkins Azalea Garden." She emphasized the wide scope and variety of organizations contributing to the establishment of this garden.

ASA President **Buddy Lee** gave an overview of the activities of the ASA and discussed the possible participation of the chapter in the upcoming annual meeting.

Discussion of various cultivar groups' resistance to storm damage followed. A Nominating Committee was named to consider officers for 2007. The committee was also tasked with developing plans for the chapter's annual meeting.

Northern Virginia Chapter

Frances Louer, Corresponding Secretary

The chapter's annual azalea plant auction was held at Phran's Azalea Trails, the gardens of **Frances and Phil Louer**, on August 29. **Bob Harrison** served as auctioneer.

Karen Rexrode, formerly the manager of Windy Hill Plant Farm, was the speaker at the September meeting. She shared information about plants to keep a garden exciting through deer attacks, humid summers, dry spells, soggy springs, and insect infestations.

Members also elected the following chapter offices: **Eve Harrison**, president; **Barry Sperling**, vice president; **Jane Newman**, secretary; and **David Nanney**, treasurer.

Oconee Chapter

Ruth Mellon, Secretary

Buddy Lee, president of ASA and creator of the Encore azaleas, was the main speaker at the August chapter meeting. He discussed techniques on hybridizing azaleas and showed pictures from his collection. Also discussed were ways to recruit new members for the Azalea Society.

He expects azaleas and rhododendron to become more in fashion in the future. One concern discussed was how to get more people with smaller yards to become interested in azaleas in their landscapes.

Buddy also distributed copies of the new ASA brochure, and he complimented **Jim Thornton** on his creation of the Oconee Chapter business card.

Vaseyi Chapter

John Brown, Newsletter Editor

In October the Vaseyi Chapter held its annual seed exchange and roundtable discussion on propagation from seed. **Ed Collins** demonstrated his method of cracking off the end of the seed capsule and extracting seed.

Ray Head and **Aaron Cook** contributed their knowledge about timing and ripeness. A table full of seed was shared, and some went to the new ASA seed exchange which Aaron briefly discussed. The forms and instructions are on the ASA web site www.azaleas.org. Currently, the students in one of Aaron's propagation class are refining and packaging seed for distribution.

Margie Y. Jenkins Azalea Garden

Established at Hammond Research Station

Editor's Note: Margie Jenkins is a charter member of the Louisiana Chapter and presently serves as Treasurer. She also has served on the ASA national board.

The Louisiana State University AgCenter's Hammond Research Station has established the Margie Y. Jenkins Azalea Garden in recognition of one of Louisiana's most widely known nursery owners and nationally known azalea lover, breeder, and authority.

"Ms. Margie," as Margie Jenkins is affectionately called, turned 85 years old this year and is still very active in the industry. "We wanted to do something to celebrate the many contributions this dynamic woman has made to horticulture, the Green industry, and to the personal development and education of so many horticulturists," said Dr. Regina Bracy, professor and resident coordinator at the station.

A garden party was hosted on Oct. 26 at the station to honor the lifetime contributions of Ms. Margie. A plaque unveiled at the garden party characterized Ms. Margie as "A person with a passion for plants and plant people."

More than 200 people attended the evening party under pouring rain. But that didn't stop the generosity of those interested in seeing the garden become a reality. "We now have over \$50,000 in cash and in-kind donations," said Bracy.

All of the proceeds will go toward the establishment and maintenance of the garden, and work has already begun on the initial phase of the garden.

Ms. Margie sat full of emotion as each speaker piled on the accolades.

Dr. Neil Odenwald, professor emeritus at the LSU School of Landscape Architecture spoke of the beginning of Ms. Margie's career; Rick Webb, owner of Louisiana Growers, spoke of Ms. Margie as a remarkable woman and detailed her life's story; Wayne Womack, landscape



Photo Robert Lee

▲ A garden party was hosted Oct. 26 in Hammond, La., to honor the lifetime contribution of Margie Y. Jenkins.

Pictured at the event are Maarten van der Giessen, Marion Drummond, Margie Jenkins, and Hayes Jackson.

architect, and Severn Doughty Sr., executive secretary of the Louisiana Nursery and Landscape Association, were the final speakers on the program. Each of the speakers on the program remembered how they were never allowed to leave Ms. Margie's nursery without being given a plant to "try out" in their own gardens.

The Margie Y. Jenkins Azalea Garden is part of the new Landscape Horticulture Research and Extension Center. "With the establishment of the garden, we will have a continuing feature that will educate people about azaleas and native plants. This garden will be a source of information, an inspiration, a delight to visit...much as Ms. Margie is and has been during her lifetime."

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Society News

Bylaws Amendment Proposed

The society's board of directors is recommending the following amendment to the society's bylaws. (Note that the revised language appears in **bold**.)

It is moved that the bylaws of the Azalea Society of America be amended so that Article III (Membership) section C (Dues) reads:

1. Annual—Annual membership dues shall be payable on the first day of the calendar year to which such dues apply. For any special classes of membership established by the Board (for example, Contributing, Sustaining, and Endowment), the amount of dues received in excess of the scheduled amount of regular annual membership dues shall, **based on anticipated need as determined annually by the Finance Committee, be used in whole or in part either for operating expenses, or** be added to the General Endowment reserve. Interest earned on savings accounts or investment instruments associated with this reserve shall be transferred each year to the Society's operating fund.

The proposed amendment shall be voted on by ASA membership at the 2007 annual meeting in Nacogdoches, Texas, March 29 - April 1, 2007.

Nominating Committee Report

The Nominating Committee presents the following candidates for officers and directors. To vote please use the official ballot found on the wrapper of this issue. Ballots must be received by March 15, 2007.

Candidate for President

John Brown is retired from a career in industrial construction with Fluor Corporation (Daniel Construction). He currently spends time finding new plants to investigate, and is rekindling his interest in collecting the Glenn Dale azaleas and working with deciduous azaleas.

John and his wife, Carolyn, live on the family farm in the foothills of the Blue Ridge Mountains in northwestern South Carolina. They have three dogs:



Photo Bob Stelton

▲ John Brown

Anna, Tigger, and Dusty. The Brown's latest project is the construction of a retirement home which will provide years of landscaping enjoyment.

John served as ASA Secretary from 2001-06. He presently serves as a Director. Other accomplishments include leading the effort to establish the society archives at North Carolina State University, D. H. Hill Library. He also has served as secretary of the Vaseyi Chapter since its charter was granted in 2001.

Candidate for Vice President

Aaron Cook is a biology and horticulture instructor at Caldwell Community College, Hudson, North Carolina. He earned Bachelor and Master degrees in Biology Education from Appalachian State University in Boone, North Carolina. He conducted graduate research on the genetics of a rare Linville Gorge plant *Hudsonia montana*.



▲ Aaron Cook

He is an active member in the North Carolina Nature Conservancy, Sierra Club, American Rhododendron Society, Azalea Society of America, and the International Plant Propagators Society.

He is an experienced trip leader for the Nature Conservancy, annually leading trips to Bluff Mountain, Yellow Mountain, Panthertown Valley, and Bat Cave. He has also led trips to the Florida panhandle, Big Bend National Park, and Outer Banks.

Aaron taught short courses in native plant identification for North Carolina State University, Western Piedmont Community College, Mayland Community College, Wilkes Community College, and Caldwell Community College. He has also presented seminars and short courses in plant propagation. He served as both an instructor and participant at NCSU's Wildflower weekends at Highlands, and Western Carolina's Native Plants in the Landscape Conference. In addition, he regularly participates in annual meetings of IPPS and ASA.

Candidate for Treasurer

Dan Krabill has been a member of the ASA since 1987. He was vice president of the Northern Virginia Chapter in 1997-98 and 2003-04, and president in 1999-2000 and 2005-06. He served on the Finance Committee of the ASA Board in 2005 and 2006.

He grows approximately 1,000 varieties of azaleas at his

home in McLean, Virginia, including the great majority of the Glenn Dales. He has published an article "Photographing the Glenn Dale Azaleas" in *The Azalean*, has a number of photos on the ASA's Web site, and has distributed a CD consisting of digital photos of most of the Glenn Dale azaleas.

Dan is a management consultant to the banking industry. He has a Bachelor of Arts degree in mathematics from Miami University, and a Master of Business Administration degree from Harvard with a concentration in finance.

Directors 2007-09

Vincent Ciolino is a long time member of the Louisiana Chapter of the ASA and has served as chapter president. He frequently attends ASA national conventions and is active in numerous horticultural societies.

J. Jackson and his wife, Lindy, operate a small container nursery, The Tennessee Rose Native Azalea Nursery, in the Blue Ridge of East Tennessee. In the beginning everything was grown in the ground, but pressure from deer browsing forced a change to container production.

The nursery specializes in growing native and hybrid deciduous azaleas. For several years, plants were grown from micro propagated (tissue culture) liners. During the last few years, however, the Jacksons made a deliberate move to growing deciduous and evergreen forms of the rhododendron species from seed.

The decision to cultivate from seed was motivated by preservation. Many rhododendron species have become endangered from the practice of collecting wild plants. The Jacksons seek out specimens in the wild (and in collections) that have superior characteristics of growth, foliage and bloom, and propagate open pollinated seeds from the plants.

The Jacksons believe one of the most enjoyable aspects of the process is exploring for and finding beautiful specimens "in bloom" or "in seed" in the wild. Digital photography is used to document the bloom and growth habit of the plants. GPS coordinates are used to map the plant location which allows the plant to be easily relocated without having to mark or tag the specimen in any way.

Dave Nanney is a founding member of the Northern Virginia Chapter of the ASA. He served in the federal government for 38 years, serving proudly in the Pentagon in Information Technology. He served active duty in the U.S. Army for two years in the late 60s.

Dave earned Bachelor's and Master's degrees at the University College University of Maryland and American University in Business Administration and Technology of Management.

Dave and his wife, Leslie, have been avid collectors of azaleas and rhododendrons since moving into their first home in 1973. They have been strongly influenced by Leslie's mother, Frances Louer, an avid collector with more than 8,000 azaleas.

The Nanneys have more than 2,500 azaleas and rhododendrons and enjoy using the ASA and American Rhododendron Society conventions to travel across the county and world. Dave is also an avid soccer player and fan playing at the Pentagon and rooting for D.C. United soccer team.

Dave has served several terms as Treasurer and President of the Northern Virginia Chapter of the ASA.

ASA Year 2006 Highlights

By Carol Flowers, ASA Secretary

Our 2006 Azalea Society of America Convention, *Capital Adventure*, took place in Rockville, Maryland at the DoubleTree Rockville Hotel. The convention was held jointly with the American Rhododendron Society, May 12-15, 2006. Activities during the convention included two days of garden tours, Azalea Society board of directors meetings, many interesting talks by experts on a wide variety of topics including horticulture trends, plant exploration, new plant introductions, and disease control, and, of course, the society's annual meeting and banquet.

During the annual meeting Dr. John Creech was presented with a Distinguished Service Award for the many years of contributions he has made to the plant world. The



Photo: Walter Przytycki

▲ ASA President Robert Lee presents the Distinguished Service Award to Dr. John Creech at the 2006 national conference. The award read: The Azalea Society of America confers upon you its Distinguished Service Award in special recognition of your outstanding azalea plant exploration and plant introduction accomplishments. — Your visits to and study of azaleas on the islands of Japan have provided much information on the origin of the Kurume azaleas and on *R. kaempferi* and resulted in your introduction of many azaleas as recorded in the USDA Plant Introduction listings between 1953 and 1978. — Azalea enthusiasts everywhere are forever grateful for these contributions to azalea horticulture. As Thomas Jefferson, one of America's first great horticulturists, stated in 1800: "The greatest service which can be rendered any country is to add a useful plant to its culture." John L. Creech, we thank you for your contributions and services as a patriot, scientist and horticultural ambassador.

society now has a new secretary, Carol Flowers, and three newly elected directors, John Brown, Ron Hooper and Tom Milner. A huge plant sale room full of beautiful azaleas and rhododendrons was a hit with convention attendees. Following the convention many participants enjoyed a post convention tour of the Blue Ridge Mountains.

Much work has been done this past year on the Azalea City project. We will have several new Azalea Cities shortly. Several applications for this honor have been received. More and more interest in the many different types of azaleas nature provides mankind is being shown by our nation's plant lovers. This program will help keep azaleas on the minds of our gardening friends.

Much work has been done on the Archive Project. John Brown reported that an index has been created for the society's archives. This is currently online at the society website, www.azaleas.org. The ASA currently occupies some seventeen plus feet of shelf space in the D. H. Hill Library at North Carolina State University.

KURUME

Continued from page 78.

due to the lower light levels in Scotland adversely affecting the setting of flower buds and causing the wood to only partially ripen. It is also said that Kurumes perform better in countries where the summer and winter seasons are clearly defined.

The most spectacular aspect of Kurumes is their flowers. They more readily cover themselves with color than most other groups of azalea and when in full-flower it is often impossible to see the leaves. They perform best when placed in full sun as this tends to ensure that they achieve a good bud-set, remain compact, and most varieties will spread and form a mound that is 4' to 6' in width. Because they tend to be early flowering, the Kurumes usually get a head start on seasonal growth, so a good measure of sun also provides an opportunity for the wood to ripen in the fall, which the Kurumes appear to need. In deeper shade the plants grow much more leggy, with an open plant habit that can reach over 6'; they are also more prone to wind damage, lichen problems, and fewer flowers.

The only boundaries in horticulture are those that are man-made. The above comments on hardiness and cultivation are intended to encourage you to have a go at growing these most rewarding plants. Only by your own experience will you learn the approach that best suits your climatic conditions and thus enable you to enjoy the stunning performance of the Kurume azaleas as each new flowering season comes around.

And, out there in the real world, there are plants of "Stevenson's" superior Kurumes waiting for you to find and collect for use in your hybridization projects, or for you to simply enjoy as spectacular garden plants in their own right.

Many garden writers are now members of the society. We hope these folks will enjoy the membership and that our publication, *The Azalean*, will provide valuable information when they write their articles.

We now have a beautiful new color brochure that the society can use to make plant lovers aware of the society, the work it does, and the many ways people can learn about azaleas through membership in the organization.

As the society evolves changes are continually made to the society bylaws. A change has been proposed this year and will be voted on at the convention annual meeting in 2007. You can find further information on this subject on page 90 of this publication.

In conclusion, we want to say thanks to Barbara Stump for the work she put in over the years that she was editor. Our publication, *The Azalean*, has been a first class journal. Barbara has done a lot to keep up the fine quality. After this issue Barbara will no longer be our editor. Taking her place will be Pam Fitch. Again, thanks Barbara.

John Hammond's interests in propagating and cultivating azaleas and rhododendrons stretch back over 30 years, although he has been involved with gardens for considerably longer. He is particularly interested in the history of old azalea and rhododendron gardens and encouraging their restoration. He is Vice-President of the Scottish Rhododendron Society, ARS Alternate Director at Large, and a frequent contributor to the Journal, ARS.

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