

JOURNAL

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Society's Purpose

To encourage interest in and to disseminate knowledge about rhododendrons and azaleas. To provide a medium through which all persons interested in rhododendrons and azaleas may communicate and cooperate with others through education, meetings, publications, scientific studies, research, conservation and other similar activities.

Membership Benefits

- Chapter affiliation with scheduled meetings
- Journal American Rhododendron Society* published quarterly
- Annual convention and regional conferences
- Seed exchange
- Listing of registration of names and descriptions of new rhododendron hybrids published in the Journal

To Join the Society

Membership categories:

(January 1 – December 31)

Student (include proof if over 18)	\$10.00
Regular	\$40.00
Commercial	\$90.00
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Sponsoring	\$150.00
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Life family	\$1,500.00

You can join the ARS through your local ARS chapter (check the website www.rhododendron.org for chapter contact info) or by sending a check or money order directly to the Executive Director of the American Rhododendron Society at the above address. Checks must be in US funds. Make checks payable to the "American Rhododendron Society." Membership includes one year (4 issues) of the *Journal American Rhododendron Society* and affiliation with the chapter of your choice. **To receive the winter issue of the Journal, renewals must be postmarked no later than Dec. 1.**



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'Kamrau Bay'. Photo by Sherla Bertelmann.

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Website: www.rhododendron.org

Office: www.arsoffice.org

JARS online: www.arsoffice.org/protect/login.asp

JARS back issues: <http://scholar.lib.vt.edu/ejournals/JARS> [to Vol. 59, 2005]

Archives: www.lib.virginia.edu/small

ARSSStore: www.ARSSStore.org

Blog: www.rhododendron.org/blog/default.asp

Plant Name Registration: www.rhododendron.org/plantregistry.htm

Rhododendron & Azalea News: www.rhododendron.org/news/newsindex.htm

From the President

Bob MacIntyre
Bandon, Oregon



The Williamsburg conference was a great success. I want to thank Don Hyatt, Dave Banks and many of the chapter members for a enjoyable and rewarding conference.

As summer begins to fade and fall pokes its head around the corner, it is time to take cuttings of many rhododendrons. When taking cutting, please consider taking cuttings for your chapter as well. With a number of specialty nurseries in the US closing, this will become more and more important. It will become more challenging to find plants for plant sales for fund raising. Our Western Vice-President, Ken Webb, has been deeply involved with a propagation group in Vancouver Island.

Don't forget—fall is also membership renewal time. This will be the responsibility of your Membership Committee and Treasurer. Renewals need to be in no later than December 1, 2016. In the past, some chapters have sent their renewals in 3-6 months late. Let's see if we can do a better job.

Please plan to attend the Western Regional Conference to be held in Newport, OR, Sept. 30–Oct. 2. See your summer journal for the complete information or their website www.2016wrrc.com

The new organizational structure has now been in place for several months. Job responsibilities have been reassigned and some positions redefined. Any change like this is always a work in progress. The Transition Team has done a wonderful job in navigating the ARS through the many changes. Let's all work together and move forward in an efficient manner.

From the Editor

Glenn Jamieson
Parksville, BC
Canada



Well, this past summer was again quite different from last year's for many of us, being more typical of most of our summers in the Pacific northwest, i.e., 2016 was cooler and wetter than in 2015, while from what I've read, the east coast of North America has had a much hotter summer this year than last year. It does make gardening challenging! I was at the Williamsburg, VA, convention last spring, and heard some great talks and saw some amazing gardens. Many were on large estates and of a scale and age not commonly seen here in the west, and it was interesting to see how gardeners work with different plant species and landscape designs to create their masterpieces!

As mentioned on page 199 in this issue, I have created with Sonja's help a new rhododendron journal called *Rhododendrons International* (RI), which in its first issue summarises the structure and activities of most of the world's rhododendron societies. I hope by now you have seen this new journal *Rhododendrons International*, which is available on the ARS website. I say most of the world's rhodo societies, because there are in fact so many that I had to restrict content in the first issue to those that were largely separate from the American Rhododendron Society (16). The exception was with Sweden, which has an ARS chapter but also the Swedish Rhododendron Group, which combines the West and East divisions of the Swedish Rhododendron Society with the South Swedish Society, which is an American Rhododendron Society chapter. Being part of the ARS, I included all the other offshore ARS chapters in my description of the ARS. However, I knew Finland, Denmark and The Netherlands have their own societies, and John Hammond informed that Scotland does too. So, I am now trying to get members from all these other societies not previously mentioned to contribute material for inclusion in Vol. 2 of RI, so that they too can become known to members of other rhodo societies.



Patrick Vettling's garden with 'Haaga' and 'Mikkeli'.

Growing Rhododendrons in a Rigorous Climate: Hardy Rhododendrons in Minnesota

Betty Ann Addison
Minneapolis,
Minnesota



Photos by the
author

Every climate can claim some challenges involved in growing rhododendrons. If it isn't too cold, hot, wet or dry, there are insects and diseases that thwart their excellence or even their survival. There is no perfect habitat in which to grow every variety of rhododendron that we might aspire to cultivate. However, I submit that Minnesota offers more than the average quota of challenges for rhododendron culture.

Located just east of the center of United States, Minnesota has a continental climate such as is found in the middle of most large continents. The Steppes of Central Asia, Interior Australia and Central Europe experience more extreme weather than their coastal areas, for example, and severe heat, cold and storms are more common. Even though not strictly in the Great Plains, the Twin Cities of Minneapolis and St. Paul, where I live, are in a transition zone between the Prairies and the Eastern Woodlands. Extensive deciduous forests (the so-called “Big Woods”) stretch along our eastern border where the Mississippi and St. Croix Rivers separate Minnesota from Wisconsin. Going westward, the forest thins and oak savannahs occur at the edge of the prairie. Oaks form “islands” of shade, sheltering woodland shrubs and spring ephemerals that punctuate the sunny grasslands, home to prairie wildflowers. Oak savannahs are a treasured feature of many parks and nature reserves in this area. To the north, the boreal forest extends southward from the Canadian border. Scattered tamarack bogs are outliers even in the northern suburbs. Therefore, the Twin Cities area is in the transition zone between three great vegetation zones extending from the east, west and north.

What it means to be Minnesota Hardy

Minnesota has cold winters, as in the winter of 2013–2014 where for 60 days the temperatures never got above 0° F (-17.8° C), and winters are long, as in 2015 when we had snow on May 15. Also, summers can be hot. As a regular occurrence there may be several days over 100° F (37.8° C) with high humidity. Drought can also be an exacerbating factor, as it was before the 2013–2014 winter, when plants were suffering from months without rain before the extended cold of the polar vortex took over. It is not widely appreciated by many that frozen ground produces drought and desiccation of plants. Water in a solid state cannot move into roots, while at the same time water is being lost from leaves through sublimation. The ground here can freeze for up to five months up to eight feet (2.4 m) deep and then take weeks to thaw in the spring. Another stressful factor is an unreliable snow cover. Snow storms often pass to the south of us, leaving us with cold, dry air that desiccates leaves. Plants that are buried in snow can survive much farther north than in our area. Frequently, a plant whose hardiness rating is -25° F (-31.7° C) in another part of the country will be brown and crisp (= dead) by spring in the Upper Midwest, even if the low temperatures experienced were substantially higher than that of the plant’s hardiness rating. Perhaps in determining the hardiness rating, the deep-cold temperature referred to was only experienced in the rated area for a couple of hours, or else the plant was snow-covered at the time. Plants here can also be damaged by sudden killing freezes in the late fall/early winter before they are fully dormant. Similarly, they can also be damaged when dormancy is broken by an early spring thaw followed by a hard cold snap. Therefore, the plants that grow in Minnesota need to have extraordinary climatic tolerances to survive!

Soils

Ten thousand years ago, a series of glaciers, some a mile (1.6 km) high, scoured northern Minnesota down to bare granite and basalt. When they melted, a huge body of water was formed, remnants of which comprise the “10,000 Lakes.” As the water dissipated, floods deposited first boulders, then gravel, then coarse and fine sands, and finally carried clay to the south, across all of Minnesota except for a small area in the southeast. This mixture of soils combined with climate makes for a wide and interesting variety of growing conditions. Northern Minnesota generally has acid, sandy soils where pines and spruce flourish. Because it is cooler, rainfall is higher and washes out alkaline elements. The Boundary Waters Wilderness Canoe Area connects with the Canadian wilderness and is known for camping, fishing and canoeing. In the Central and South, clay and underlying limestone, combined with less rain, have produced a neutral or alkaline soil. The farther south and west you go the drier the climate and the higher the pH of the soil, which is why corn, soybeans and wheat flourish in the rich fertile farmland found there. Again, the Twin City area is in a transition zone, of soils as well as climate. In fact, sandy soil on one side of a street and clay on the other is not uncommon.

Sun Angle and Winter Shade

Because of its latitude (43-49° N), summer days are relatively long, with the sun rising and setting far north of the zenith. Conversely, the winter sun is low in the south on the shortest days of the year. This phenomenon can be utilized to advantage. In midwinter, the sun does not rise over my one-story home, for instance. Shade on the north side of buildings, fences or conifers can thus protect slightly tender plants. Temperatures are just as low, or lower, yet they are protected from winter sun. Winter sun is hard on all evergreens, conifers as well as broad-leaves. At temperatures below freezing, many a plant has made it to March and then be damaged. The power of the increasing effect of sun, with snow reflecting the sun's heat, raises the temperature in the leaves, only to have them refreeze with a passing cloud, or nightfall. Because the ground is still frozen, roots cannot translocate moisture, leaves become dried out and thus appear burned weeks later. In the summer, plants on the north side receive plenty of sun to grow and flower, especially if they receive reflected light from an adjacent grassy area.

My Transition

I moved to Minnesota from the mild climate of Long Island, New York, some 50 years ago, and it was a great shock to find the horticultural scene here so limited. It seemed that “if your grandfather didn't grow it, it wouldn't grow here”! Nurseries sold only the toughest native trees and shrubs like maples and potentilla. However, it soon became a consuming adventure for me to try new things. My dear mother on Long



R. 'Besse Howells'.

Island started sending packages, brimming with plants to try. Many of them made it successfully, so I began to propagate them and ultimately opened a small nursery for alpiners and conifers. In due time it grew into a large nursery. When my land was later sold to a large retail outlet, I became able to pursue my first love—of rhododendrons—in earnest. Now, I am back to owning a small nursery and landscape company and enjoy spreading plant knowledge and especially the all-consuming joy of growing rhododendrons. After growing thousands of kinds of plants, rhododendrons hold me fascinated twelve months of the year, with their infinite variety of flowers, foliage and form.

Rhododendrons in Transition

I sometimes am amazed at how far rhododendrons have been transformed from their parent species that are located in semi-tropical forests, mountains covered in deep snow and/or sheltered valleys. Nevertheless, we have discovered several kinds of species and hybrids willing to overcome obstacles and manifest an indomitable will to survive.

Four Test Garden Locations

With the hope of inspiring others in cold climates to grow a wider variety of rhododendrons, here is a compilation of the hardiest, most adaptable plants available in commerce, grown in four Twin Cities locations. Patrick Vettling's garden is the furthest north with sandy, acid soil and it experiences Zone 3 winters quite often. Marty Carson's garden is in the eastern metro and he has a sheltered garden with loamy clay soil. The

Minnesota Landscape Arboretum's Rhododendron Garden is located southwest of the Metro and has heavy clay soil, amended with granite chips, sulphur and peat moss. It is located in a protected valley and has the warmest winter temperatures. My gardens are midway between these gardens, and are exposed to north winds. One half is on fine sandy loam, shaded by bur oak trees (*Quercus macrocarpa*) and the other is on clay loam in sun. Both parcels have neutral pH which is purposely not amended with anything but rotting wood chips and oak leaves so that any plants grown there can tolerate a high pH.

Our Hardest Survivors

Patrick, Marty and I have tried and discarded hundreds of named hybrids and thousands of seedlings. I found the experiments ate up both time and money, but each gave just enough success to stimulate an addiction to the challenge. When rhododendrons bloom, they are so spectacular that any heartache is forgotten! The following plants are exceptional in regards to hardiness and are also grown in wide areas of our country and the world for their beauty and adaptability.

To be sure, all the plants recommended here have been grown for lengthy periods in year-round sun or lightly filtered shade in Zone 4 where temperatures of -25° F (-32° C) are experienced regularly with little or no damage.

Evergreen Rhododendrons Recommended for Minnesota Gardens. (# Indicates small-leaved plants.)

'April Rose'#: A deep pink, double lepidote, whose stamens have turned into petals. Makes a fabulous sight, along with early magnolias, at the first hint of spring before the leaves are on the trees. Like all lepidotes, it does well in full or part sun.

'Besse Howells': Ruffles and a dark blotch give this nearly red flower a distinctive character. Planted at the apex of a wind tunnel, it has never failed to bloom and has low, spreading, compact growth.

'Boule de Neige': This means "Snowball" in French, and this 100+ year old plant is one of the parents of 'Besse Howells', so is also low and spreading. Winter shade is good, but it is a tough survivor and provides structure in shady gardens.

'Bubblegum'#: Bright pink flowers cover this compact lepidote in early spring. Very hardy and likes full sun, so is a good companion in a mixed border.

'Capistrano': Nicely rounded, light yellow trusses make a sensation in a shaded garden, as it is the hardest yellow broad-leaf rhododendron in commerce. A north-facing site, protected from burning sun but flooded with reflected light from a lawn or patio, is the ideal placement.

'Casanova': The full trusses are a blend of pink, orange and yellow with a rust-colored flare. New to my garden, but apparently hardy, it forms a neat, dome-shaped shrub. It is a favorite of hybridizers.



R. 'Crete'.

'Crete': Cherry buds, opening pink and fading to white give the appearance of a horticultural strawberry shortcake. Low and spreading in full sun here, it grows taller in mild climates. New leaves are covered with silvery tomentum, which gives an additional decorative effect. It may not be hardy farther north, but it has never failed to bloom here.

'Dorothy Swift': A classic yak hybrid with deep pink buds and white flowers. A large, well-budded plant grows at the Minnesota Landscape Arboretum.

'Floda'#: Delicate light and dark pink striped petals, it makes a good contrast with strongly colored early spring lepidotes. It is a broad plant with airy branches that suspend swarms of flowers.

'Haaga': Here is the "sine qua non" of hardy rhododendrons. Deep pink flowers in large, round trusses and vigorous growth make it the one my customers always have success with. Large growing, tolerant of sun and shade, it is one of the best, if not the best, of the "Finnish Hybrid" rhodos.

'Helsinki University': When there is room for another large rhododendron (5' (1.5 m) in 10 years), the light pink trusses and rapid growth of this fine plant give much needed variety. It is used extensively in hybridizing, as is 'Haaga', for super-hardy, colorful rhododendrons.

'Henry's Red': Long highly valued for its fiery color and hardiness, it grows fast and favors the north side of a building with a little protection from winter sun.



Patrick Vetting's woodland garden with 'Haaga' in foreground.



R. 'Floda' in Marty Carson's garden.



R. 'Landmark' in Betty Ann Addison's rock garden.

'Ingrid Mehlquist': Red buds open to soft pink flowers, accented with a maroon flare. Its low spreading plant habit and velvety new growth are attractive year-round.

'Karin Seleger'#: A fine accent for a rock garden in part sun where its dwarf habit and bright red-purple flowers bring structure to alpine flowering landscapes.

'Ken Janeck': An outstandingly willing plant in the garden, it has the classic red buds, pink flowers—fading to white—with the thick indumentum and neat, spreading growth of its yak parentage. Widely available, it is used in landscapes but must be planted where it receives winter shade.

'Landmark'#: Glowing cherry colored flowers. Even though it may suffer some winter sun damage to leaves, it always blooms to the tip in early spring. It is upright in youth and spreading later.

'Mikkeli' (Syn. of 'Saint Michel'): Now, here is a plant to reckon with! Tall growing, hardy in full sun, with blush buds and white flowers, it has reached 10' (2 m) tall in Patrick's garden in 20 years. Because of its vigorous growth, it is best as a "view plant" in the landscape, because it would overpower smaller plants in foundation plantings.

'Mountain Marriage': Pure white flowers are in perfectly globular trusses. It blooms late, so it extends the flowering season. The plant is low, spreading and has neat, compact foliage that is often admired even when not in bloom.



R. 'Olga Mezitt'.

'New Century': Creamy yellow flowers of good substance are produced on a slow growing, compact plant. As with other yellows, plant it in good light but protect from late afternoon sun. A large plant is thriving in this situation at the Arboretum.

'Olga Mezitt'# (Syn. of 'Olga): Tops for a candy-pink replacement for 'PJM' in most situations. Tolerates clay, sun or shade and is hardier and more drought tolerant than the reverse cross of 'Aglo' (Syn. of 'Weston's Aglo'). 'Olga Mezitt' is the best choice for those just starting out with rhododendrons.

'PJM'#: Who doesn't know the merits of this plant in all its permutations of Compact, Elite, etc.? It is still the most hardy and accepting of any rhododendron, known and loved wherever it is grown—from Arizona to Maine and internationally. At Ed Mezitt's Horticulture Award ceremony (awarded posthumously) by the I.P.P.S. it was confidently declared that "PJM changed the face of horticulture in New England," but this also applies to the Upper Midwest, I must add. Sun suits it the best, and some of its greatest specimens have been planted on the "southwest corner of a building in lime rock"—my definition of where no rhododendron should grow!

'Purple Gem'#: Densely covered with deep violet flowers in April, it has tiny leaves and a compact habit. This quality makes it useful as a bordering hedge, like a flowering boxwood, or as a focal point in a rock garden. Good drainage is particularly important.



R. 'White Peter'.

'Red Quest'#: The vibrant red-violet flowers are closest to red of any of the small leaved type. Very compact growth makes it a good up-close landscape choice, summer and winter.

'Trinity': Pure white flowers are pale pink when newly opened. Ball-shaped trusses are lightly scented. Plants make a sun-tolerant dome.

'Visiting Angels': Snowy white in flower and bud, the trusses are large and the plant is tolerant of clay soils.

'White Peter': Pure white flowers with a deep purple flare remind me of snow leopard paws. Extremely vigorous and hardy, there are several in Minnesota gardens that are 5' (1.5 m) high by 8' (2.4 m) wide. One of these at Marty Carson's home is inexplicably flourishing even on the southwest corner of the house in limestone mulch! He and I have had many a good laugh over that.

What's Next?

Like all growers, we in Minnesota are looking to grow increasingly unusual flower colors and forms, with foliage characteristics not seen before in hardy plants. Starting 42 years ago with 'Boule de Neige', I sought advice from David Leach about how to grow more varieties. He suggested a 3-part plan, starting with seeds of known hardy species from the northernmost extent of their range. In a thousand seeds, he said, perhaps one will possess enough hardiness in its genes to survive. Once these hardy

individuals were thoroughly tested, he suggested using well-known, but not necessarily hardy hybrids for inspiration, then repeating those same crosses with the super-hardy seed-grown parents. The third step is to grow out these hybrids in the same rigorous conditions as are encountered in regular landscapes in the area to find those that exhibit extreme hardiness as well as beauty. That was a good plan. You can't go back if you hitch your wagon to the wrong star!

Species tried have been *Rhododendron catawbiense* from North Carolina and *R. degronianum* subsp. *yakushmanum* from Yakushima Island, which produced my first successes. These were followed by *R. smirnowii* from Japan, *R. brachycarpum* from Korea, *R. maximum* from North Carolina and a variety of lepidotes such as *R. mucronulatum*, *R. dauricum* and *R. carolinianum*.

Patrick, Marty and I have accumulated a stable of super-hardy species and hybrids to use as seed parents, but we also have our secret stashes of half-hardy plants out of the public eye. They are hiding in greenhouses, lined out in seedling beds and sheltered out of the winter sun, all grown with the intention to bring in new characteristics. In addition, we are deeply indebted to hybridizers in other parts of the country and the world who have shared pollen of nearly hardy plants and seed through the ARS and other seed exchanges, thereby speeding up our hybridizing efforts beyond imagining. Particularly, Kristian Theqvist, Jack Looye, Joe Brusio, Bruce Clyburn, John Weagle, Don Hyatt, Dave Hinton, Yasuyuki Doi, Norman Beaudry, Richard Flavell and others must be thanked for their generous contributions to our efforts. In a few years it is hoped that some new hardy and exciting results from Minnesota rhododendron breeding efforts can be shared.

Betty Ann Addison is a member of the Midwest Chapter.

Life begins the day you start a garden.

Chinese Proverb



Fig. 1. *R. pronum*.

Rhododendron pronum in the Wild

Bent Ernebjerg
Vaerloese,
Denmark



Photos by the author

Introduction

There has been much hype about *Rhododendron pronum* (Fig. 1) during the last 50 years. *R. pronum* was first found by Forrest in 1919 on the Chienchuan-Mekong divide, and it was first introduced by Rock in 1923, and later reintroduced twice, in 1930 by Forrest and in 1932 again by Rock. It has been rare in cultivation, as it was not found in the wild again until 1999 when it was found by Jens Nielsen, and then later again by Remi A. Nielsen, both on Biluoxueshan. However, little information on these locations, habitats and plant forms of *R. pronum* are available, and only a few photos of *R. pronum* in the wild have been published. This short article on observations from my travels provides information on where to find *R. pronum* in the wild, and its growth habits are described and illustrated by pictures.



Fig. 2. The area explored.



Fig. 3. Bent Ernebjerg and *R. pronum*.

Locations

I found *R. pronum* on an expedition in October 2015, to Yunnan, China. The target of the expedition was Mt. Laowo (4400 m; 14,400 ft) on the Salween–Mekong divide (Biluoxueshan) northeast of Fugong (Fig. 2). Not only did I find *R. pronum* there, but there was a mountainside with hundreds of *R. pronum*, and some areas totally covered with this species (Fig. 3). This allowed me to observe the great natural variation of this

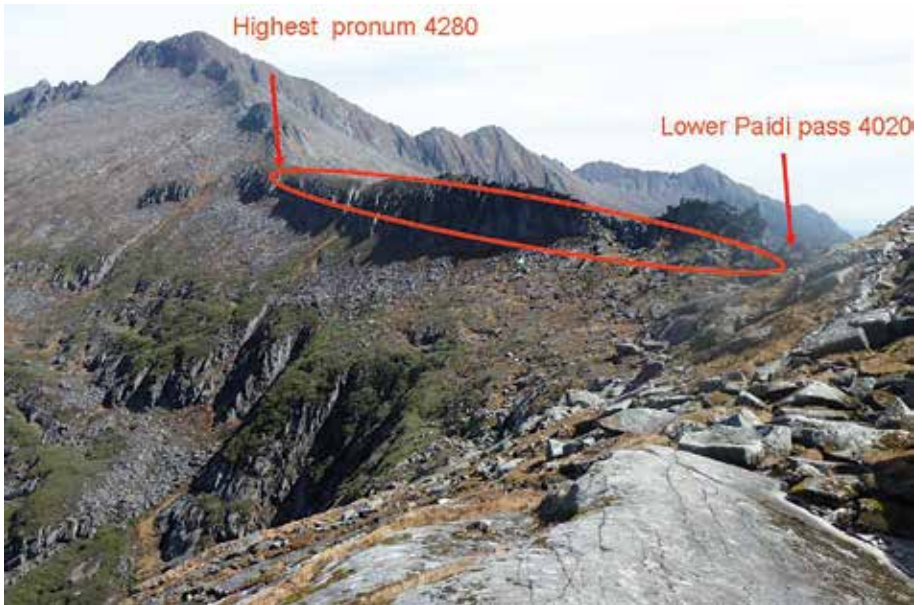


Fig. 4. The vertical range (in m) of *R. pronum*.



Fig. 5. A mountainside of *R. pronum*, compact mat form.

species in one place. There are two trails to this mountain, the one that I used was from Deqin village in the Mekong River valley, and the other one is from Fugong in the Salween River valley.



Fig. 6a. Open form *R. pronum* with *R. aperantum*.



Fig. 6b. Open form *R. pronum* with mosses and *Diapensia*.

Habitat

R. pronum were growing on a steep, rocky mountainside facing northwest, at the end of a barren valley leading to the Salween River. I found *R. pronum* growing below the Lower Paidi Pass at 4000 to 4280 m (13,123 to 14,042 ft), but the lower part of the mountainside was not explored so *R. pronum* may also be growing at lower elevations.



Fig. 7. Open mat form *R. pronum*.

R. aperantum was found growing together with *R. pronum* and this species was found up to 4325 m (14,190 ft), which makes it likely that the highest altitude for *R. pronum* on this mountain may also be about 4280 m (Fig. 4).

The *R. pronum* mountainside is snow covered until mid-June, and it is wet from then on until mid-October (the rainy season). To see *R. pronum* flowering in the wild, it is thus necessary to go in the rainy season, which may be the reason for the lack of published wild *R. pronum* flower photos. At an elevation of 4160 m (13,350 ft), there is another pass to the Mekong River side, and *R. pronum* was found right up to the pass, but none was found on the Mekong River side of the pass.

I also explored the Mekong side of Laowo Mountain at the end of the Laowo Valley, which faced southeast. There I found both *R. aperantum* and *R. taliense*, but no *R. pronum*. On the Salween side, I also explored two other mountain slopes. One was in the same barren valley leading from the Lower Paidi Pass up to the Upper Paidi Pass at 4200 m facing north (13,780 ft; Fig. 4), and one was on the other side of the Upper Paidi Pass in the valley leading to Fugong facing northwest. The same results were observed, with *R. aperantum* present and on the latter one, also *R. taliense*, but not a single *R. pronum* was found. This indicates that *R. pronum* only survives under very specific climatic conditions.

Plant Structure and Exposure

The *R. pronum* growth habits we observed were quite varied: from single plants to mat forming groups (Figs. 1, 5). *R. pronum* was found creeping and growing with other plants, like mosses and *Diapensia* (Figs. 6b), but it can grow to a height of 20 cm



Fig. 8. *R. prunum* two bud colours.

(7.9 in). Both single plants and mats can be either compact or open in structure (Figs. 5-7). The lowest branches of all forms of *R. prunum* were normally covered with other vegetation, such as mosses and *Diapensia*.

R. prunum did not occur in protected locations but grew in locations fully exposed to the elements.

Leaf and Bud Descriptions

Concerning leaves, I cannot add much to existing descriptions, except by noting that there was not great variation in leaf size and form, but the leaves on some plants had a bluish color. The common bud color was red but there were also plants with green buds (Fig. 8).

Epilogue

I was previously on Mt. Laowo to find *R. prunum* in late June 2013. We passed through the Lower Paidi Pass and continued to the Upper Paidi Pass. The weather then was terrible, being cold, stormy and with heavy rain. Coming back down, I collected seeds of *R. campylogynum* on the Lower Paidi Pass, but I did not walk up to the ridge where *R. prunum* was growing, only ten steps away. Had we taken those steps, we could then have seen flowering *R. prunum* in the wild, which only goes to show how challenging it can be to find rarer species of rhododendrons in the wild! The next morning our campsite was flooded, so we had to leave the mountain two days before we had planned, without finding *R. prunum* on that trip, one of the ironies of fate!

Bent Ernebjerg is a member of the Danish Chapter,

Congratulations, We were Successful, We Won, But did We?

Richard Murcott
East Norwich, NY



(Adapted and expanded from a talk given at the Northeastern Regional Conference Oct. 2015)

Yes, congratulations, as we were successful! We, the American Rhododendron Society, turned rhododendron culture completely around and changed how they were evaluated by gardeners. Let me explain! Before World War II, rhododendrons were judged on three characteristics, with a priority to the characters. The first and most important characteristic was hardiness, and I can't emphasize enough how important hardiness was. It was exclusionary. If a plant wasn't hardy, forget about it. Dave Leach in his book, *Rhododendrons of the World*, talked about the importance of hardiness. The ARS assigned hardiness ratings to rhododendrons: H1, H2, H3, etc. Remember them? No one uses them anymore. Guy Nearing once told me that if one pip in one bud on one of his hybrids was blasted over the winter, he would discard the plant. Paul Vossburg was a commercial nurseryman. He grew rhododendrons in an open field with no protection at all: no hoop houses, trees, wind breaks, nothing! So he had to have very hardy plants that would look great in the spring when the time came to sell them.

But the real "Mr. Hardiness" was Clem Bowers. Clement Gray Bowers graduated from Cornell University with a Masters Degree in botany in 1925. In the fall of that year, he moved to New York City to become a PhD candidate in botany at Columbia University. I do not know when Clem became interested in rhododendrons but he chose them as the subject of his doctoral dissertation: "The Development of Pollen and Viscin Strands in *Rhododendron catawbiense*." Now I suspect that everyone knows what "viscin" is, but just in case you don't it is the name of the threads that hold rhododendron pollen together in strings. If you want to see Bowers' PhD dissertation, just type in "viscin" in Google and away you go.

In addition to his interest in rhododendrons for his research, he also wanted to develop rhododendrons hardy enough to be grown at his home in Maine, New York

(just north of Binghamton, NY) where the winter low temperature could go to -40° F (-40° C). He spent his first winter in Maine, NY, reading everything that he could find on rhododendrons and decided in early 1926 that his best chance of developing these super hardy rhododendrons was to cross all the Ironclads, each with each other.

The Ironclads were a group of 14 rhododendron cultivars so identified by Charles Sprague Sargent at the Arnold Arboretum as “Ironclad Hardy at the Arnold” in 1917. C.S. Sargent was friendly with an English hybridizer, Anthony Waterer, who sent 200 of his named hybrids to the Arnold for hardiness testing in the late 1800s. Waterer had no idea how hardy his hybrids were as they were developed in Southern England and had never been exposed there to very cold weather.

There had been enormous interest in rhododendrons in the USA as a result of the use of rhododendrons imported from England where they were used as landscape plants at the Centennial Celebration of the American Revolution held in Philadelphia in 1876. The Arnold wanted to obtain some of those English hybrids for hardiness trials in Boston. When Anthony Waterer offered the plants to Sargent, he was delighted. It was the original group of 14 Ironclads, plus a few other hybrids that were locally known to be very hardy, that Bowers decided to cross, each with each other, making about 200 crosses in total. In 1926, Bowers was living in an apartment in New York City, so how did he make all these crosses and grow the resulting seed to blooming stages? Well, he engaged Hicks Nursery on Long Island, a suburb of New York City. Hicks had everything Bowers needed: they had all the Ironclads, plenty of room to grow the seedlings and the knowledge and experience to germinate and grow on the seed.

So Bowers made a deal with Hicks. He would make the crosses and Hicks would germinate and grow the seed. Hicks would own the plants but Bowers could select and move plants that he thought might be super hardy to his home garden for trial. Starting in 1926 and for the next three years, he traveled out to Hicks to make his crosses. It was during these hybridizing trips that he became very friendly with Paul Vossburg, a young employee at Hicks, and encouraged Paul to make his own crosses. Indeed, Paul copied one of Clem's crosses, ‘Mrs Charles S. Sargent’ × ‘Everestianum’. There were two ‘Everestianum’s at Hicks: the Ironclad form and another that was called “Pink Everestianum.”* They appeared virtually identical but they were slightly different, as the ironclad form had a glabrous ovary and the pink form had a pubescent ovary. Bowers used the ironclad form and Paul used the pink form.

Bowers also made hundreds of other crosses, many with *R. maximum*, but none turned out to be useful. The ironclad crosses were also a disaster, as the flowers and plants were inferior to the mother plants. Many were destroyed in the winter of 1931-1932 when the winter temperature dropped to 5° F (-15° C) with 50 mile (80 km) an hour winds and no snow cover. Even the ironclads got smacked; ‘Atrosanguineum’ was the only ironclad that bloomed after that winter, thus making it the hardiest red rhododendron. (Note: I never see listings in the seed exchange using it, or any Ironclad

for that matter, by people looking for plants hardy in Zones 4, 5 or 6.) However, as luck would have it, Paul's cross produced 130 seedlings, of which only three were good, and the best of these was named 'Meadowbrook', to this day a wonderful rhododendron. This disastrous experience using the Ironclads made a great impression on Vossburg. From then on he always said, "Don't use the ironclads," but he should have added "by crossing each with each other." Well, I have spent a lot of time investigating hardiness to emphasize how important it was once considered, and here I give some history that you might not know of.

The second most important characteristic was plant habit. Were the leaves a good color green? Did the plant hold the leaves for several years to give the plant a full, compact appearance? Did it just present itself as an attractive plant in the garden twelve months of the year?

The third most important characteristic was the flower: its color, size and shape. However, after the end of WW II, suddenly everything changed. Now the most important characteristic was flower color, size and shape, and both the second and third most important characteristics were also flower the color, size and shape! Rhododendrons suddenly became a flower centric-plant, and nothing else seemed to matter. Everywhere you look it is typically just the flower that is shown, such as in catalogs, in the ARS Journal's newly registered rhododendrons section and in Hirsutum.info. How could this possibly have happened so quickly?

What happened was the creation of the ARS right after the end of WW II and the New York Chapter a year later. Right from the very first year, the most important chapter event was the flower show. And what was exhibited at the flower show? Of course, it was a flower truss with its collar of leaves immediately surrounding it, AND NOTHING ELSE. Suddenly hardiness didn't matter. If a plant only bloomed once every four or five years, no problem, just show it that year and wow the members. No one knew or asked how regularly the plant bloomed. Plant habit was not exhibited as the entire plant itself was never shown, so of course plant habit didn't matter either.

This allowed hybridizers to hybridize for flowers only, since nothing else mattered. Frequently new hybrids are exhibited as their initial bloom and there is no knowledge by the hybridizer of the plants' hardiness or growth characteristics. That has certainly happened to me. Initially the plant looks great, but after nine or ten years, the plant is seen as a disaster and is discarded. Of course the answer is to hold off exhibiting the flower until the plant is about ten years old and the plant habit and hardiness have been evaluated. That is mighty hard to do when you are excited when you see the initial bloom on a plant, especially after waiting five years or so to see it.

We are now in the age of polyploid rhododendrons and that fits in perfectly with this flower truss quest. Polyploid rhododendrons usually produce larger, more intensely colored flowers, albeit on vigorous plants that may become open growing and too big for the small garden. But of course, since the truss is all that matters, we seem to excuse

the open, excessive growth of some of these new polyploids. I must admit that for the last three or four years, I have put most of my hybridizing efforts into finding polyploid hybrids with beautiful trusses that are on more compact plants, unfortunately unsuccessful to this point.

I know that we cannot do away with the truss show, but there are some things that we can do to try to inform everyone about other important characteristics of the plant. Why not have a little information sheet regarding the entry, stating, for example, the number of times in the last five years the plant has bloomed with a full complement of trusses and what was the coldest temperature that the plant had been exposed to and still bloomed. Perhaps also show a full color picture of the plant from which the truss was cut.

Thus, while we have been successful in transforming rhododendrons into flower-centric plants, the general gardening public is still basically interested in great looking, hardy garden plants that consistently have nice flowers. I always remember Joe Cesarini, an old nurseryman friend of mine, who told me in 1964 when I told him that I was going to hybridize rhododendrons, “Dick we don’t need all these new, fancy colored rhododendrons that hybridizers are producing. All we need is a pink ‘Boule de Neige,’ a red ‘Boule de Neige’ and a yellow ‘Boule de Neige.’”

However, maybe we have a solution to this conundrum of beautiful flowers on miserable plants. Grafting! Using ‘Cunningham’s White’ (CW) as root stock seems to change the growth habit of the scion as it matures. Certainly fruit trees have responded beautifully to this technique, dwarfing the tree but keeping the same size fruit. The use of ‘Cunningham’s White’ as root stock started in Germany where nursery row after nursery row of different cultivars of rhododendrons all exhibit the same dense, compact plant habit with, seemingly, no negative effect on flower characteristics.

Karl Bernady and George Woodard are two Eastern rhododendron enthusiasts looking into this propagation technique. At the October 2015 Eastern Regional Conference, George brought in hundreds of young plants grafted onto ‘Cunningham’s White,’ and Karel gave an interesting talk on his grafting technique.

Plants sold in the big box stores are all container grown using accelerated growing techniques (“plants on steroids”). Only a few cultivars respond well to this heavily fertilized technique, which is the reason there is such a limited number of cultivars available from them. Will grafted plants with CW roots respond as well to these techniques? If they will, or if another root stock can be found that has the same desired effect on growth habit and also responds well to an accelerated growth technique, we will really change the history of cultivated rhododendrons.

Perhaps Joe Cesarini will finally get his wish!

* = not registered.

Richard Murcott is a member of the New York Chapter.

An Hawaiian Tropical Plant Adventure

Glen Jamieson
Parksville, BC
Canada



Photos by the author

For many years, I grew orchids, having a few thousand plants at one point and even a small business where I imported and sold orchids at orchid shows in the Pacific Northwest from Seattle, WA, to Nanaimo, BC. However, for Canadians they require significant winter heating (to about 20° C (70° F)) and their huge diversity, with more species than any other plant family (*Orchidaceae* has about 27,800 currently accepted species, while the next most abundant family, *Asteraceae* (*Compositae*) has about 23,600 currently accepted species) meant that for a plant collector like me, both space and suitable greenhouse microhabitats had become serious limitations. My solution a few decades ago was to largely leave orchids, except for a few cymbidiums, oncidiums and phalenopsis to provide seasonal displays, and to switch to rhododendrons, including maddenias and vireyas. Vancouver Island, BC, Canada, has an ideal climate for temperate rhododendrons, although some summer watering is required during our increasingly long and hot summer droughts. Maddenias need protection for only a week or so when we have below freezing temperatures from outflow, continental winds, so I keep them potted and ready to move into my garage on these few occasions (desiccation seems to be more of a problem than cold). My vireyas are kept in greenhouses from November through March, both because of their greater sensitivity to freezing and the greater work required in moving the hundreds I have. Vireyas can tolerate cold temperatures so long as it stays above freezing, and my greenhouses only occasionally need heating to 1 C° (33° F) when the outside temperature goes below freezing. This is usually at night, as colder weather here is usually associated with clear skies and sunny conditions, which heat up my greenhouse to well above freezing during the day.

In November, 2015, my wife Dorothy and I travelled to the Big Island, Hawaii (Fig. 1), where I was finally able to see vireyas as the dominant rhododendron in gardens! There were a few maddenias growing in the cooler climate at higher elevations, notably around the town of Volcano at about 1200 m (4000 ft), but even there, vireyas dominated. Vireyas were mostly observed around Hilo on the eastern, windward side

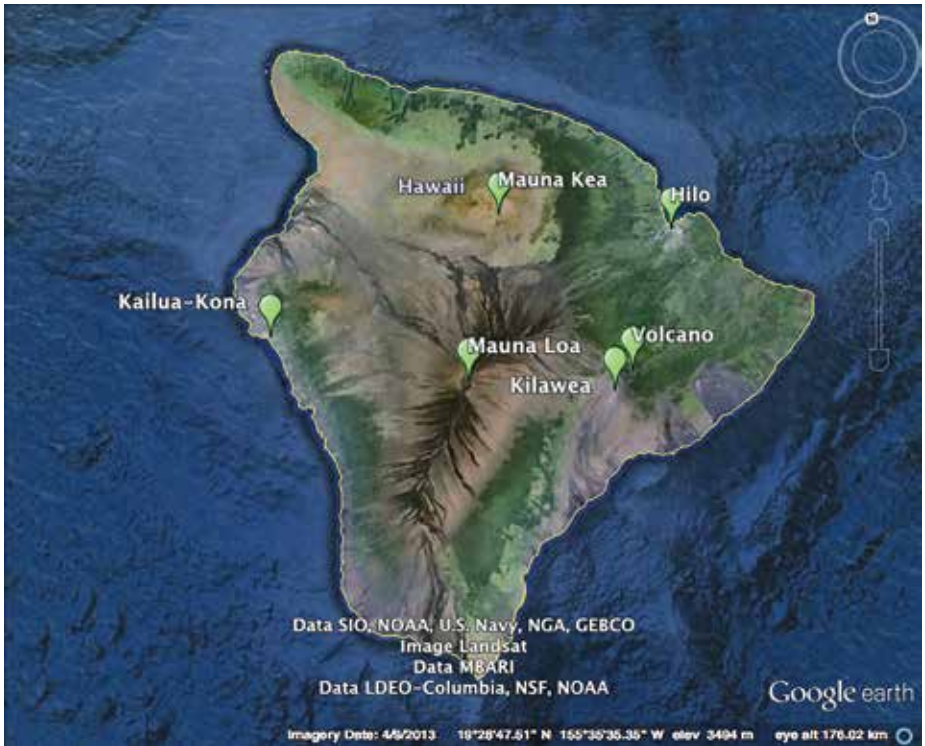


Fig. 1. The Big Island (Hawaii) of Hawaii.

of the island, as in the drier, rain shadow habitat around Kona, we only saw them in the wetter gardens above about 460 m (1500 ft).

I was invited to give a talk at the November 2015 Hawaii Chapter meeting on the gardens and experiences we had the previous year in New Zealand, when we attended the 70th anniversary convention in Dunedin organised by the Rhododendron Society of New Zealand (see Jamieson 2016). This allowed us to meet many Hawaiian Chapter members, and Sherla Bertelmann and her husband Richard Marques (Fig. 2) kindly hosted us and took us to a number of gardens around Hilo and Volcano on the eastern side of island. Through them, we were also able to visit Dean Ouer's garden and Norm Bezona's Cloud Forest Sanctuary at about 500 m (1600 ft) elevation in Kona. The result was new insight for me into the amazing diversity of vireyas (and by extension rhododendrons in general), ways to grow vireyas, and to see what a jungle vireya garden with its arrays of hibiscus (Fig. 3), anthuriums (Fig. 4), heliconias (Fig. 5), flowering gingers, calatheas, palms and vireyas, to name just a few plant groups, can look like! Here, I discuss and illustrate some of what I observed and noted regarding vireyas.

One of my more memorable observations at the Hawaii Chapter meeting was the raffle draw for the scores of amazing vireya trusses that had been brought in by members



Fig. 2. Sherla Bertelmann and Richard Marques.



Fig. 4. Anthuriums.



Fig. 3. *Hibiscus* 'City Slicker'.



Fig. 5. *Heliconia rostrata*.



Fig. 6. Vireya trusses for raffle at the Hawaii Chapter monthly meeting.

(Fig. 6). In sequence, people went up to choose their selection from the table, which I understood they then took home to root and ultimately plant in their own gardens. Many of the trusses came from Sherla's and Richard's Pacific Island Nursery, Keaau, HI, which was quite impressive. Because of the tropical climate there, no greenhouses are needed but overhead shade cloth is used over the propagation tables to protect the newer established plants and rooting cuttings. The culture media was small chunks of coconut husk (coir) mixed with perlite (Fig. 7), which allowed rapid draining after the frequent rains and occasional hose waterings. These porous husks hold moisture for a day or so, and when squeezed the morning after a nocturnal rain, water dripped out. However, my feeling was that while this definitely works well in the always hot climate in Hilo, use of this media might cause problems with the much cooler seasonal climates I grow my vireyas in in Canada, as this media would hold water too long and likely cause fungal problems. I water daily and need a media that dries relatively quickly. It just goes to show that there is likely no universally optimal practice for vireya culture, and that culture and media need to be adapted to specific locations.

Sherla also utilized a vireya cutting propagation approach that I hadn't seen before,



Fig. 7. Coconut perlite potting medium.



Fig. 8. Rooted vireya cuttings in Oasis Growing Medium wedge strips #5655.



Fig. 9. Cuttings planted with their Oasis wedge in Fig. 7 potting medium.

namely Oasis Growing Medium wedge strips #5655. In her facility, cuttings are simply stuck into the Oasis wedges, are kept moist outside under the shade cloth, and just a few months later, rooted cuttings still in their Oasis wedges (Fig. 8) are planted with coconut husk chunks in pots (Fig. 9). Very simple, and in the Hilo climate, it has proven to be very effective! Sherla gave me three Oasis strips, and I used them to culture some of my cuttings on a 20° C (70° F) heating pad in my greenhouse to see how they worked in my quite different environment! I had a much poorer success rate than Sherla's almost 95% rate, but this was likely due to my having to keep them in a relatively small, closed environment to keep the humidity high. I think a system with better air circulation would have been more beneficial.

We were also taken to the late Mitch Mitchell's garden (Kimalia) in Volcano (1200 m (4000 ft) elevation), which is now being maintained by his son Jim. This is a true jungle vireya garden (Figs. 10, 11), with hundreds of vireyas and anthuriums (Fig. 12) growing under mostly native tree ferns and *Metrosideros polymorpha*, 'ōhi'a lehua, a native species of flowering evergreen tree in the myrtle family, *Myrtaceae*. Endemic Hawaiian birds, excluded from lower elevations because of introduced avian malaria (higher elevations are a poor environment for the parasite-carrying mosquitos), flitted about with their melodious calls, creating a truly magical environment. Many spectacular vireyas were in flower, such as 'Cair Paravel' and 'Popcorn' (Fig. 13, 14), and many of the hybrids were new to me (Figs. 15-18), as they had been developed in Hawaii and are not widely propagated elsewhere. I was particularly interested in the numerous planted



Fig. 10. Kimalia, the late Mitch Mitchell's garden.



Fig. 11. Dorothy Jamieson with 'Cair Paravel' In Kimalia.



Fig. 12. Anthuriums in Kimalia.



Fig. 13. 'Cair Paravel'.



Fig. 14. 'Popcorn'.



Fig. 15. 'Kisses'.



Fig. 16. 'Chuck's Lyon*'.
*Registered trademark of the American Rhododendron Society.



Fig. 17. Sherla Bertelmann with 'Sherla Bertelmann' in Kimalia.



Fig. 18. 'Sherla Bertelmann'.



Fig. 19a. *R. himantodes*.



Fig. 19b. *R. himantodes*.

vireya species, as this was the first time I had seen many of them growing to a large size in a relatively natural environment. *R. himantodes* in particular was amazing, with its wonderful speckled flowers and narrow leaves (Figs. 19a,b).

In summary, for those interested in meeting some great people and in learning more about vireyas, a group of rhododendrons perhaps less well known to most *JARS* readers, I encourage you to visit the Big Island of Hawaii. In addition to its tropical plants, seeing its active volcanoes, lava fields, astronomical observatories and tropical marine fish and mammal species are amazing experiences, so it is truly a worthwhile place to visit!

Also, see P. 64 and visit the Pana'ewa Rainforest Zoo!

* = not registered.

Reference

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Dr. Glen Jamieson is a member of the Mount Arrowsmith Chapter and the editor of JARS.

Taking Care of the Gardener: Don't let Ticks and Mosquitoes Vector in on you!

Steve Henning
Fleetwood, Pennsylvania

Glen Jamieson
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S. Henning



G. Jamieson

The American Center for Disease control (CDC) and local authorities are now on alert for the Zika virus, but it is not a major threat in the USA yet and especially not in Pennsylvania. Actually ticks are the biggest threat to the gardener in our area with mosquitoes a distant second. Both are called vectors because they are biting animals that may transmit a disease or parasite from one animal to another. It is important to be aware of what problems they can cause.

Pennsylvania has been referred to as the “Lyme disease capital of the world” the last three years, and West Nile virus is now becoming an emerging threat. We should be able to recognize the symptoms and the vectors causing the problem, especially the ticks. In fact, one of the best treatments against ticks is to make sure we don't have any attached to our bodies when we come in from gardening. Preventing tick and mosquito bites is very important and fairly easy to do if we think of it in advance.

What Diseases do they Spread?

The diseases caused by ticks and mosquitoes are many and include some nasty ones. Because ticks can harbor more than one disease-causing agent, patients can be infected with more than one pathogen at the same time, compounding the difficulty in diagnosis and treatment. If you know you have been bitten by a tick, always tell medical professionals about this when reporting any new symptoms. The symptoms are very non-specific and are often misdiagnosed unless a possible cause is mentioned to the doctor.

1. Lyme disease

Lyme disease is an infection caused by the spirochete bacteria *Borrelia burgdorferi* which is transmitted to humans by blacklegged ticks, or deer ticks. The blacklegged

tick (*Ixodes scapularis*) spreads the disease in the northeastern, mid-Atlantic, and north-central United States, while the western blacklegged tick (*Ixodes pacificus*) spreads the disease on the Pacific Coast. It is a complex illness sometimes characterized initially by a bull's eye shaped rash. If you are infected and get the rash, you are lucky since it is easily treated at this stage. If the rash is not present, you can get many combinations of symptoms including headache, fever, sore throat, nausea, etc. If left untreated, these can turn into late phase symptoms which may progress to debilitating arthritic, cardiac, and neurologic conditions, but rarely directly to death. There are several tests for Lyme disease, but treatment is often started before test results are in if the bull's eye rash is present.

The bull's eye rash appears as a red rash and expands to cover a large round region at least two inches (five cm) in diameter over a period of days or weeks. The center of this lesion often tends to progressively clear, giving the name "bull's eye rash." The bull's eye rash is generally accompanied with intermittent fatigue, fever, headache, a stiff neck, muscle aches, and/or joint pain. The joint pain can be mistaken for other types of arthritis, such as juvenile rheumatoid arthritis (JRA), and neurologic signs of Lyme disease can mimic those caused by other conditions, such as multiple sclerosis (MS) and amyotrophic lateral sclerosis (ALS).

Early diagnosis is important in preventing late-stage complications. When detected early, Lyme disease can be treated with antibiotics. Left untreated, the disease can spread to the joints, heart and nervous system. Classic signs of untreated cases can include migratory pain or arthritis, impaired motor and sensory skills and an enlarged heart.

2. Rocky Mountain spotted fever

Rocky Mountain spotted fever was first recognized in the United States during the 1890s, but until the 1930s it was reported only in the Rocky Mountains. By 1963, over 90 percent of all cases were reported east of the Rockies. In the east, cases occur when people come in contact with infected ticks from their pets or in their yards.

Rocky Mountain spotted fever is caused by very small bacteria, *Rickettsia rickettsii*. There are three tick vectors, the American dog tick (*Dermacentor variabilis*), the Rocky Mountain wood tick (*Dermacentor andersoni*), and the Brown dog tick (*Rhipicephalus sanguine*). The vector in the east is the American dog tick.

Symptoms include a red-purple-black rash, usually on the wrists and ankles, which appears from two days to two weeks after infection. A fever, headaches, and listlessness also are characteristic. Broad-spectrum antibiotics are used to treat Rocky Mountain spotted fever. Diagnosis can be made with a blood test, but treatment should not wait for lab confirmation, as fatalities do occur.

3. Tularemia

Known as rabbit fever, tularemia is carried by ticks of the genera *Amblyomma*, *Dermacentor*, *Haemaphysalis*, and *Ixodes*. Rodents, rabbits, and hares often serve as

reservoir hosts, but waterborne infection accounts for 5 to 10% of all tularemia in the US. Tularemia can also be transmitted by biting flies, particularly the deer fly, *Chrysops discalis*. The causative bacteria is *Francisella tularensis*. In 1989, 144 cases were reported in the US, compared to nearly 2,300 cases in 1939. Between 1990 and 2000, the rate was less than one per 1,000,000, meaning the disease is extremely rare in the US today.

Symptoms include fever, chills, loss of appetite, general body aches, and swollen lymph nodes. An ulcer forms at the site of the bite. Blood tests are used in diagnosis, and treatment consists of antibiotics. If not treated, symptoms intensify. Tularemia causes a few deaths each year.

4. Babesiosis

Babesiosis is a malaria-like parasitic disease caused by infection with *Babesia*, a genus of *Apicomplexa*. Human babesiosis is an uncommon but emerging disease in the Northeastern and Midwestern United States and parts of Europe, and is sporadic throughout the rest of the world. It occurs in warm months. Ticks transmit the human strain of babesiosis, so it often presents with other tick-borne illnesses such as Lyme disease. In cattle, a major host, the disease is known as Texas cattle fever, redwater, or piroplasmiasis.

Caused by the sporozoan parasite, *Babesia microti*, the disease in the USA is transmitted by the blacklegged tick. Fatigue and loss of appetite are followed by a fever with chills, muscle aches, and headaches. In more extreme cases, blood may appear in the urine. Babesiosis is more severe in older people and those with no spleen, and fatalities can occur in older patients. The condition is treated with drugs that are used to treat malaria, but with limited success. Generally, the disease is self-limiting and symptoms disappear on their own.

5. Anaplasmosis

Anaplasmosis is a disease caused by a rickettsial parasite of ruminants, *Anaplasma phagocytophilum*. Anaplasmosis is transmitted to humans by tick bites primarily from the black-legged tick and the western black-legged tick in the south and west where the tick hosts *Ixodes* spp. are found. Early in the 20th century, this disease was considered one of major economic consequence in the western United States. However, in the 1980s and 1990s, control of ticks through new acaricides and practical treatment with prolonged-action antibiotics, notably tetracycline, has led to the point where the disease is no longer considered a major problem.

Synptoms may be severe anemia and result in cardiovascular changes such as an increase in heart rate. Blood in the urine may occur due to the lysis of red blood cells. General systemic signs such as diarrhea, anorexia and weight loss may also be present.

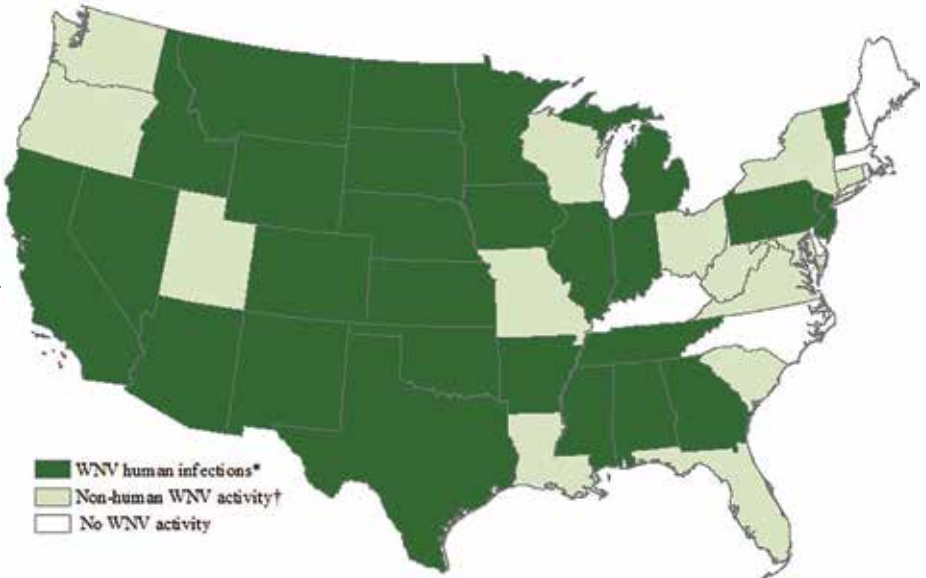


Fig. 1. West Nile activity by state.

(source: <https://www.cdc.gov/westnile/statsmaps/preliminarymapsdata/activitystatedate.html>)

6. Tick paralysis

Tick paralysis is not a disease, but a condition caused by toxins that a tick injects into its host during feeding. Most mammals seem to be affected, but smaller and younger mammals, including children, are more susceptible.

Symptoms begin a day or two after initial attachment. The victim loses coordination and sensation in the extremities. The paralysis progresses in severity, the legs and arms becoming useless; the face may lose sensation; and speech becomes slurred. If the breathing center of the brain is affected, the victim may die. If the tick or ticks are found and removed, recovery begins immediately.

This condition is associated with ticks attached around the head area, particularly at the base of the skull. Ticks that have been implicated in tick paralysis are the Rocky Mountain wood tick, the lone star tick (*Amblyomma americanum*), and the American dog tick. Some individual ticks cause tick paralysis. The toxin that causes this condition is part of the salivary fluid that the tick injects. Because the problem is associated with ticks attached on the head, and because recovery is quick upon removal of the tick, it is theorized that the toxin acts locally and is broken down in the body rapidly. The important thing is to be aware that it exists and, when symptoms occur, to attempt to find the tick and remove it.

7. West Nile virus

In Pennsylvania, the risk of contracting a mosquito-borne disease has recently increased with the introduction of West Nile virus (WNV). Fortunately, WNV poses

little risk unless individuals have compromised immune systems.

West Nile virus is a mosquito-borne disease that can cause encephalitis, a brain inflammation. WNV is closely related to the St. Louis encephalitis virus that is found in the United States and was first detected in North America in 1999 in New York, and in Pennsylvania in 2000.

Infected mosquitoes pass the virus onto birds, animals and people. West Nile virus cases in Pennsylvania occur primarily in the mid-summer or early fall, although mosquito season is usually April-October.

People with mild cases of West Nile virus may experience fever, headache, body aches, skin rash and swollen lymph glands for a few days, the department said, but most people who are infected will not have any symptoms.

There are no medications to treat or vaccines to prevent WNV infection. Fortunately, most people infected with WNV will have no symptoms. About one in five people who are infected will develop a fever with other symptoms. Less than 1% of infected people develop a serious, sometimes fatal, neurologic illness known as West Nile encephalitis or meningitis, with symptoms including headache, high fever, neck stiffness, stupor, disorientation, coma, tremors, convulsions, muscle weakness, and paralysis. In those cases, symptoms may last several weeks, and neurological effects may be permanent.

Which Ticks and Mosquitoes?

Many species of ticks can transmit diseases from an infected host to other uninfected hosts. Some of the more frequently transmitted organisms include parasitic worms, viruses, bacteria, spirochetes and rickettsias. Most important to Pennsylvanians are spirochetes that cause Lyme disease, and rickettsias that cause Rocky Mountain spotted fever.

More than 25 species of ticks have been identified in Pennsylvania but only four species account for 90% of all submissions to Penn State University for identification. They are: 1) the American dog tick, 2) the blacklegged tick, 3) the lone star tick, and 4) the groundhog tick, *Ixodes cookei*.

1. American dog tick, *Dermacentor variabilis*.





Fig. 2. American dog tick occurrence in the USA in yellow.
(source: http://www.cdc.gov/ticks/geographic_distribution.html)

American dog ticks are widely distributed east of the Rocky Mountains but also occur in limited areas on the Pacific Coast. American dog ticks are found mostly in areas with little tree cover, such as grassy fields and scrubland, as well as along walkways and trails. They feed on hosts, ranging in size from mice to deer. Nymphs and adults can transmit diseases such as Rocky Mountain spotted fever and Tularemia. American dog ticks can survive for up to two years at any given stage. Females can be identified by their large off-white scutum against a dark brown body.

Maps: The tick distribution maps here and following are not meant to represent risks for a specific tick-borne disease, because disease transmission is influenced by multiple factors beyond mere tick presence. These maps have been designed to answer the question “What ticks should I be concerned about at a regional scale?” (source: http://www.cdc.gov/ticks/geographic_distribution.html)

Adult males and females are active from April to early August, and are mostly found in tall grass and low lying brush and twigs. They feed on wildlife hosts, including raccoons, skunks, opossums and coyotes, as well as domestic dogs, cats and man. Adult American dog ticks commonly attack humans. Male ticks blood feed briefly but do not become distended with blood. Once finished feeding, males mate with a female while she feeds, which can take over week. Once engorged, female dog ticks detach from their host and drop into the leaf litter, where they can lay over 4000 eggs.

Larvae are active from late April to September, and can be found on voles, mice, raccoons, opossums, etc. in the leaf litter. In Pennsylvania, larvae overwinter and are

most abundant in the spring and early summer. After blood feeding for three to four days, larvae detach from their host and fall into the grass/meadow thatch and leaf litter where they molt into nymphs.

Nymphs are active from May to July and feed on animals, such as mice, voles, rabbits, raccoons and skunks. Nymphal dog ticks rarely attach to humans. Once engorged, nymphs detach from their host, falling into the grass/meadow thatch and leaf litter where they molt into adults.

2. Blacklegged tick (*Ixodes scapularis*) and the Western blacklegged tick (*Ixodes pacificus*).



Blacklegged ticks (deer ticks) take two years to complete their life cycle and are found in the east predominately in deciduous forests. Their distribution relies greatly on the distribution of its reproductive hosts, white-tailed deer in the east and black-tailed deer in the west. Both nymph and adult stages transmit diseases such as Lyme disease, babesiosis, and anaplasmosis.

Adult males and females are active from October-May, as long as daytime temperature remain above freezing. Preferring larger hosts, such as deer, adult blacklegged ticks can be found questing about knee-high on the tips of branches of low growing shrubs. Adult females readily attack humans and pets. Once females fully engorge on their blood meal, they drop off the host into the leaf litter, where they can over-winter. Engorged females lay a single egg mass of up to 1500-2000 eggs in mid to late May.

Larvae emerge from eggs later in the summer. Unfed female blacklegged ticks are easily distinguished from other ticks by the orange-red body surrounding the black scutum. Males do not feed. The six-legged larvae are active from July-September and can be found in moist leaf litter. Larvae hatch nearly pathogen-free from eggs, and remain in the leaf litter where they will attach to nearly any sized mammal and many species of birds. Preferred hosts are white-footed mice. Larvae remain attached to their host until replete, which usually requires three days. Once fully engorged, the larvae drop off of the host and molt, re-emerging the following spring as nymphs.

Nymphs are active from May-August, and are most commonly found in moist leaf litter in wooded areas, or at the edge of wooded areas. The eight-legged, pin-head sized nymph typically attaches to smaller mammals such as mice, voles, and chipmunks,



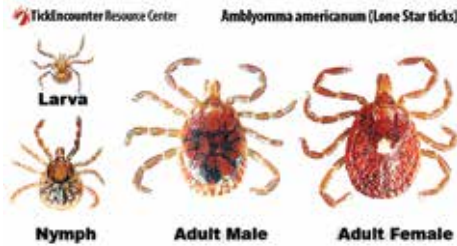
Fig. 3. Blacklegged tick occurrence in the USA in yellow.
(source: http://www.cdc.gov/ticks/geographic_distribution.html)



Fig. 4. Western blacklegged tick occurrence in the USA in yellow.
(source: http://www.cdc.gov/ticks/geographic_distribution.html)

requiring three to four days to fully engorge. Nymphs also readily attach to and blood feed on humans, cats and dogs. Once fed, they drop off into rodent burrows or leaf litter in animal bedding areas where they molt and emerge as adults in the fall.

3. Lone star tick (*Amblyomma americanum*)



Lone star ticks are found mostly in woodlands with dense undergrowth and around animal resting areas. The larvae do not carry disease, but the nymphal and adult stages can transmit the pathogens causing Monocytic Ehrlichiosis, Rocky Mountain spotted fever and ‘Stari’ borreliosis. Lone star ticks are notorious pests, and are human biters.

Adults are active from April-August and can be found questing for larger animals, such as dogs, coyotes, deer, cattle and humans on tall grass in shade or at the tips of low lying branches and twigs. Females are easily recognized by a single white dot in



Fig. 5. Lone star tick occurrence in the USA in yellow.
(source: http://www.cdc.gov/ticks/geographic_distribution.html)

the center of a brown body, with the males having spots or streaks of white around the outer edge of the body. Females require a week to ten days or more to engorge and can lay 2500-3000 eggs.

Nymphs are active from May-August, and can be found questing for deer, coyotes, raccoons, squirrels, turkeys and some birds as well as cats, dogs and humans. Where abundant, nymphs seemingly swarm up pant legs and can become attached in less than ten minutes. Nymphs typically take five to six days to become replete, and once fully engorged, they fall off of the host into the leaf litter, where they molt into adults.

Larvae are active from July-September and quest for a wide variety of animals, including cats, dogs, deer, coyotes, raccoons, squirrels, turkeys, and some small birds. After feeding for around four days, they drop off of the host and bury themselves in the leaf litter, where they molt into nymphs.

4. Groundhog tick (*Ixodes cookei*)



The groundhog tick, *Ixodes cookei*, can be found east of the Rocky Mountains into New England and southeast Canada. The tick mostly feeds on rodents and medium-sized mammals, especially groundhogs and skunks. It will feed on a variety of animals including humans. Although *Ixodes cookei* is common in areas with groundhogs, it is not considered to be an important vector of Lyme disease and is not a known vector for any other zoonoses

An adult groundhog tick is about the size of a sesame seed and has a tan body with a reddish-tan plate on its back behind its head. Nymphs and larvae are a lighter tan color and are much smaller than adults. Groundhog ticks feed on small mammals such as skunks, raccoons and groundhogs.

Groundhog tick larvae, nymphs, and adults will readily bite humans and dogs. Groundhog ticks become active in the spring and remain a nuisance through mid-August, with peak activity occurring during late June.

Groundhog ticks may be found in brushy areas and along trails bordered by tall grass or weeds. They are also common in unused human dwellings since these environments are nesting places for small mammals

5. Northern house mosquito (*Culex pipiens*)



Pennsylvania has 60 species of mosquitoes. The mosquito most often discovered in urban areas of Pennsylvania is the northern house mosquito, *Culex pipiens*. This is also the mosquito that is thought to transmit the most human cases of West Nile virus in Pennsylvania and consequently poses the greatest annoyance and risk to our citizens.

Some mosquito species can complete their life cycles in as little as seven days but the northern house mosquito requires a minimum of 10-14 days—more often closer to a month.

Adult female mosquitoes require a blood meal in order to produce viable eggs. While feeding, the females inject saliva-containing anticoagulants that prevent the blood from clotting. Because mosquitoes take numerous blood meals, they can acquire disease organisms from an infected host and later transmit those organisms to previously uninfected hosts.

Considered to be a medium-sized mosquito, the adult *Culex pipiens* may reach up 0.25 in (six mm). The House mosquito species' body is usually brownish or grayish brown. The proboscis and wings are usually brown.

Larvae are known as wigglers since they seem to move in that manner. They feed on fungi, bacteria and other tiny organisms through straw-like filters. These larvae will undergo growth throughout this stage.

Pupae are known as tumblers because of the way they seem to “tumble” through the water. Their rounded, comma-like shape makes this mode of movement easy. These pupae do not eat during the one to two days in which they will become an adult mosquito.

Control of this mosquito is achieved through meticulous removal of water holding containers. Birdbaths and pet bowls should be scrubbed and the water changed at least every few days. For the gardener, check stacks of pots and saucers that are exposed to rain and make sure they are dry. Gutters and downspouts should also be free of leafy debris that might retain rainwater. Still-water ponds, water features, and wet ditches can be treated with the biological control bacteria, *Bacillus thuringiensis israelensis*, sold as Mosquito Dunks or Mosquito Bits or Aquabac (in Canada).

Protect Yourself!

The best advice for preventing Lyme disease, West Nile virus, and other tick and mosquito-borne diseases is to:

1. Wear treated light-colored SPF clothing while outdoors, including a broad-brimmed hat, a long-sleeved shirt, and long pants tucked into the socks.

Permethrin-treated clothing will kill ticks that are crawling. Spray-on applications can last five or six washings. Pretreated clothing may remain effective up to 70 washings.

It is for use on clothing only. It does not harm or irritate skin, but it offers no benefits if applied to skin. It is considered totally safe to people, the environment, and to clothing.

2. If in a place where ticks may occur, check your body daily for the presence of ticks. Self-examination is recommended after spending time in infested areas. If an embedded tick is found, it should be removed with fine tweezers by grasping the head and pulling with steady firm pressure. The tick should not be grabbed in the middle of its body because the gut contents may be expelled into an individual's skin. The use of heat (lit match, cigarette, etc.), or petroleum jelly is NOT recommended to force the tick out. These methods will irritate the tick, and may cause it to regurgitate its stomach contents into the individual, thereby increasing the possibility of infection.

3. Use tick and mosquito repellents. DEET, Picaridin and Oil of Lemon Eucalyptus have proven to repel both ticks and mosquitoes for up to eight hours. These are the most effective formulations.

30 to 40% DEET such as Sawyer Ultra 30 and 3M Ultrathon offer up to twelve hours protection. Weaker formulations protect for shorter periods of time. **WARNING:** DEET can damage plastics but will not damage cotton, wool or nylon. For children, do not use concentrations stronger than 30%. Do not apply to open cuts.

Picaridin was developed as an alternative to DEET. With a concentration of 20%, Sawyer Picaridin offers up to eight hours protection. Care should be taken when using near plastics.

Oil of Lemon Eucalyptus such as Repel 30% Lemon Eucalyptus provides up to seven hours of protection. It is totally safe around all materials and people. It is an ingredient in Vicks VapoRub.

Natural plant oils such as citronella, cedar, geranium, etc. offer limited protection.

The first line of defense against ticks and mosquitoes is to take precautions in the outdoors by using insect repellents, wearing long sleeve shirts and long pants treated with permethrin, checking for, and promptly and properly removing any ticks if found, and showering shortly after exposure.

What to do if You get Bit!

Tick Bites. Usually, removing the tick, washing the site of the bite, and watching for signs of illness are all that is needed. When you have a tick bite, it is important to determine whether you need a tetanus shot to prevent tetanus (lockjaw).

Many of the diseases ticks carry cause flu-like symptoms, such as fever, headache, nausea, vomiting, and muscle aches. Symptoms may begin from one day to three weeks after the tick bite. Sometimes a rash or sore appears along with the flu-like symptoms. Tick paralysis is a rare problem that may occur after a tick bite.

Though rare, tick bites can trigger a severe anaphylaxis reaction. If epinephrine is available, do not hesitate to use it. Using an epinephrine auto-injector as a precaution

will not harm you and could save your life. Call 911 after using the EpiPen.

Call your doctor or seek immediate medical care if: you have signs of infection, such as:

- Pain, swelling, warmth, or redness around a bite.
- Red streaks leading from the bite.
- Pus draining from the bite.
- A fever.

Watch closely for changes in your health, and be sure to contact your doctor if:

- You develop a new rash.
- You have joint pain.
- You are very tired.
- You have flu-like symptoms.
- You have symptoms for more than 1 week.

Mosquito Bites. Mosquito bites can be an itchy nuisance. They'll go away on their own. For relief in the meantime, apply a hydrocortisone cream or calamine lotion to the bite. A cold pack or baggie filled with crushed ice may help, too.

In the United States, mosquitoes can spread West Nile virus. For about 80% of people who are infected, this virus causes no symptoms. But in some people, West Nile virus can cause severe illness and even death. Those more at risk for getting sick from West Nile virus are people over 50 and older. In mild cases, symptoms may include:

- Fever
- Body aches
- Headache
- Vomiting
- Swollen glands

Serious symptoms require a doctor's care. They include:

- High fever
- Muscle weakness
- Vision loss
- Neck stiffness
- Disorientation or stupor
- Tremors, convulsions, numbness, paralysis

Symptoms usually occur three days to two weeks after a bite from an infected mosquito. If you notice any severe symptoms, see your doctor right away. You can usually treat less severe symptoms, such as a mild fever or headache, at home.

Steve Henning is a member of the Valley Forge Chapter and is the developer and manager of the ARS Store. Glen Jamieson is a member of the Mount Arrowsmith Chapter and the editor of JARS.

2017 ARS Photo Contest

Instructions

The Contest is open only to ARS members in good standing as of the contest closing date. Judges and their immediate family (spouse, parents, siblings, and children) and household members are not eligible. By participating in the Contest, each entrant fully and unconditionally agrees to and accepts these Official Rules and the decisions of the Judges, which are final and binding in all matters related to the Contest. There are no prizes except bragging rights, and the Editor of *JARS* has the right to publish runner up and winning entries.

All photos submitted must have been taken between August 1, 2016, to July 31, 2017. Entries must be received by midnight PST, July 31, 2017. All entries should prominently feature either rhododendrons, azaleas and/or vireyas in the composition. Competition categories: 1) Flower, truss or spray; 2) Plant in bloom; 3) Landscape or plants in the wild or in gardens; 4) Foliage; 5) People, Insects, or Animals; and 6) Other, for creative or artistic effects of any kind that involves these plants. This could involve the use of software products like PhotoShop.

Photo Guidelines: 1) The Photo must be in .jpg, .jpeg, or .gif; 2) Images submitted should be sent by email and be of modest size, about 1024 to 1280 pixels in length and 480 to 768 in width, which would correspond to a dpi of at least 300 for a 3 x 5 in (7.6 x 12.7 cm) photo; 3) Cropping of digital images and minor adjustments to exposure and color balance is permitted for entries in all categories. Advanced image editing features available in software products like Photoshop should not be used except for entries in category six; 4) The Photo caption and/or description must not exceed 200 characters in length. Provision of some details about the camera and settings for each entry is also required, and for submissions in category 6, include a brief explanation of how the image was created; 5) The Photo cannot have been submitted previously in an ARS contest (chapter contest submissions are acceptable); and 6) The number of entries by any individual per category is restricted to two.

Society News

Awards

DE ANZA CHAPTER

Bronze Medal: Cheriell Jensen

The De Anza Chapter was pleased to present Cheriell Jensen its highest honor, the Bronze Medal, for her outstanding service to our society at the chapter's annual year-end picnic June 11, 2016. Cheriell has been a long-time contributor and supporter of our chapter. She has served as president. An accomplished photographer and artist, she promotes the chapter's sales and meetings with her beautiful flyers and posters. It is with great pleasure that the chapter awards her the Bronze Medal.

EUREKA CHAPTER

Bronze Medal: William Troiano

You joined the Eureka Chapter, ARS, more than eleven years ago. You volunteered immediately to clean and polish the twenty-two trophies awarded at the annual flower show. You have performed that service every year since in addition to serving as a cashier at the show. Without your long-term efforts the show would not succeed. The Eureka Chapter of the American Rhododendron Society is proud to present the Bronze Medal to William Troiano. 26 May 2016.

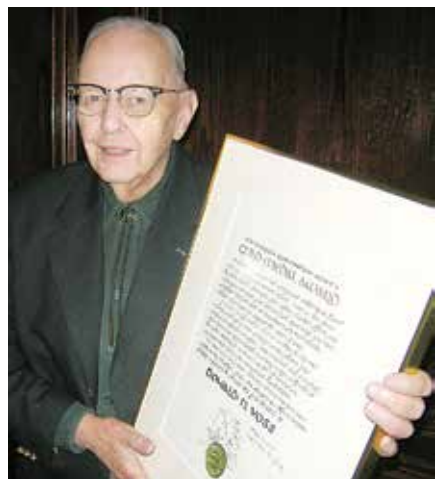
In Memoriam

Remembering Donald H. Voss 1922-2016

I find it difficult to express the profound sense of loss I felt when Donald Hagen Voss passed away on August 12. Don was more than just a good friend for over 40 years. He was a mentor, and an invaluable resource to me and many others.

The more I got to know Don, the more impressed I was with his intellect and depth of knowledge. It seemed to span all disciplines. He instantly grasped the big picture but simultaneously noticed every detail. He willingly shared his talents but never sought praise. With great humility, he accepted the ARS Gold Medal in 2010. That deserving tribute can only touch on his exceptional life.

A highly respected leader, Don served



Don Voss accepting the ARS Gold Medal Award

Society News

In Memoriam continued

as a National Director on both the ARS and ASA Boards and was president of our local chapters. Don has been a valuable advisor on the ARS Research and Editorial Committees for decades.

Professionally, Don was an economist. He attended Princeton University, earning a BS in Public Affairs (1947) and MS in Economics (1949). He did interrupt his studies to serve in the U.S. Army during World War II. Don reached the rank of Captain by 1946, but then shifted to reserve status to continue his education. In 1970, he retired as a Lieutenant Colonel.

Don taught economics at Princeton until 1952, and then went to Bucknell University as an Associate Professor until 1961. In 1952, Don married Betty (Elizabeth) Anne Gartrell. They had one son, Donald Jr., in 1954.

In 1961, Don accepted a position with the Central Intelligence Agency and moved his family to Vienna, VA. Don was an Economic Intelligence Officer in the CIA and became a Division Director before retiring in 1988.

A prolific writer, Don authored 37 articles in the *ARS Journal* and co-authored another. He wrote profusely for the *Azalea* and other professional journals, too. Always the teacher, his articles often tried to clarify some confusing technical issue, such as why *R. cumberlandense* is no longer called *R. bakeri*. Don was a noted authority in colorimetry, taxonomy and botanical nomenclature.

Over the years, Don and I worked together on a number of projects. It did give us an excuse to regularly meet for lunch. We first made a website about the Robin Hill Azaleas. Don's father-in-law, Robert Gartrell, hybridized the Robin Hills. Don had already finished registering them so the website provided a rather complete online resource. More recently, Don and I worked on a PowerPoint program about Rhododendron Registration. It captured some of his expertise on color evaluation and is available for download from the ARS Store.

A selfless person, Don knew the value of volunteerism. His incredible record at the U.S. National Arboretum will not likely ever be matched since for 29 years, he volunteered two days a week, usually in the Herbarium. An initial project was on the Glenn Dale Azaleas, where he collated floral and foliage specimens, literature descriptions, and photographs.

For another project, Don directed the final editing and publication of a 330 page document titled *A Catalog of Cultivated Woody Plants of the Southeastern United States* (Collection No. 7). He wrote a database to assist in the study of more than 14,000 herbarium specimens and their field notes and photographs.

Don carefully checked every rhododendron in the Herbarium, making sure thousands of specimens were properly described. He also re-checked approximately 4000 entries in the Arboretum's Type Specimen and Horticultural Standards Collections. That study included extensive literature searches. Don even ran the Herbarium for more than a year when the Collections Manager position became vacant.

Don would have been 94 on November 6. Although getting frail and needing a cane, his mind was as sharp as ever. Don was a private person who enjoyed his

Society News

In Memoriam continued

independence. His wife, Betty Anne, passed away in 1969 and his son died in 2008, so with no immediate family, he did live alone.

On July 4th, Don fell while in his basement and was unable to get up. Discovered two days later, Don was weak, dehydrated, and severely bruised from failed attempts to stand. After a stay in the hospital, he moved to a nursing facility. We thought he was on the mend, but sadly, he developed aspiration pneumonia which took him in just a few days.

I visited Don in the hospital, and shared photographs from recent mountain hikes or images of unusual native azaleas or rhododendrons we had seen. My final visit was with Karel Bernady, just two days before he got pneumonia. That time I brought images of the range of *R. minus* variations we had seen in the wild, as Don was very interested in that species and had written several articles about it.

After emphasizing the need to formally describe *R. minus* var. "smokianum," Don changed the conversation. He thanked us for our friendship over the years, and said how important our efforts to document native plants have been. Of course, we shared our mutual admiration of him. It reminded me of reflections I had with my late mother the week before she passed. Don was saying goodbye.

As one could probably predict, Don asked that there be no funeral or memorial service. That is why I am so grateful for that opportunity while he was still alive to let Don how much we appreciated him. Yes, Don will be missed, but he has left a lasting legacy. He will certainly not be forgotten.

Don Hyatt

Don Voss's Sole Author Publications

- 1989 Why *Rhododendron nakaharae* instead of *R. nakahara*? 43(3)
- 1992 Errors found in R.H.S. colour chart 46(2)
- 1995 Stirring the nomenclatural pot 49(3)
- 1996 Commentary: What's the Point? 50(4)
- 1997 More on Naming 51(2)
- Rhododendron bakeri* vs. *R. cumberlandense* 51(4)
- 1998 Letter to the editor 52(2)
- Results of a comparison of the three editions of the RHS colour chart 52(3)
- 1999 What Are Those Azaleas? 53(3)
- 2001 Conflicting Epithets in *Rhododendron championiae* 55(1)
- Validation of Botanical Names: *Rhododendron brachycarpum* ssp. *tigerstedtii* and *Rhododendron maximum* var. *leachii* 55(3)
- What Is An Azalea? JARS 55(4)
- 2002 The Royal Horticultural Society Colour Chart 2001 56(1)
- 2003 Did You Say "Yellow" 57(2)
- Rhododendron bakeri* vs. *R. cumberlandense* revisited 57(3)
- 2004 A Nomenclatural Note 58(3)
- 2005 Color and Color Variation in the Robin Hill Azaleas 59(2)
- An Error in the Glossary of the New Rhododendron Register 59(4)
- 2008 The RHS mini colour chart: A Belated Review 62 (1)
- 2009 How Plants Get Too Many Names 63(1)
- Glossary: Dimorphic and Deciduous 63(2)
- 2010 Comments on the New Edition of the International Code of Nomenclature for Cultivated Plants 64(3)
- True-color Images: An Elusive Goal 64(4)
- 2011 A Key for *Ledum* in *Rhododendron* 65(2)
- Botanists versus Horticulturists: Changes in Plant Names 65(3)
- How Personal Names Become Epithets 65(4)
- 2012 Is Godzilla Really *Rhododendron ponticum*? - A Review 66(2)
- When Is a Grouping a "Group"? 66(3)
- 2013 Nomenclatural Pitfalls: Linnean Azalea Names 67(2)
- Rhododendron dalhousiae* (aka *R. dalhousiae*) 67(3)
- Nomenclatural Codes Belong in Your Toolbox 67(4)

Society News

In Memoriam continued

2014 A Third Botanical Variety in *Rhododendron minus* 68(2)

Authorship of *Rhododendron minus* var. *chapmanii* 68(3)

2015 *Rhododendron metternichii*: An Illegitimate Love Affair 69(2)

2016 O. Kuntze: A Loose Cannon? 70(1)
Letter to the Editor 70(2)

Rhododendron 'Vittatum': Lifting a Rock 70(4)

Co-authored Publication

1996 Cultivars named for Presidents, First ladies.
Jay W. Murray and Donald H. Voss 46 (2)

[Editor's note: Don Voss, as shown from the above, was a very major contributor to *JARS*, and as a member of the ARS Editorial Committee, was a significant advisor to me. I am thus taking the unusual step of listing all of Don's *JARS* publications here, to give further recognition for his many contributions to the ARS.]

Richard (Dick) Bonney

When Richard (Dick) Bonney passed away on June 1st, 2016, we lost another stalwart member of our North Island Chapter. He and his wife Pauline were charter members of the chapter and were involved in every aspect and activity of the NIRS. He and Pauline were awarded the Bronze Medal in 1999 and in 2010 were presented with the NIRS Outstanding Service Award.

As a director on many committees you could depend on him to carry out all his commitments in a quiet and responsible way. When work parties were called for our Rhododendron Garden, Dick was always there, no matter the weather, setting an example for all and encouraging everyone with his dry witty comments.

He was very proud of his garden and offered to open it for our Mother's Day garden tours. Even though he was unwell, he insisted that the garden was open for his last tour.

During our "show and tell" portion of our meetings his humour and self-deprecation came to the fore. His humorous presentation was a hard act to follow causing others, who had something to show, to always try to show their items before Dick got up.

He will be missed by all who knew and loved him, and I think most of us did. We will think of him often, especially his humour during the "Show and Tell" segment of our meetings.

We will remember you Dick . . . Rest in peace!

Al Muller

August 3rd, 2015, the NY Chapter lost a much loved and respected member. A quiet and unassuming man who was always a welcoming figure at our meetings. He was a gentleman of the highest order.

Born on November 20th, 1924, and raised on the Phipps Estate in Old Westbury, NY, Al went on to serve his country as a pilot in WW II and later spent his entire working career at Grumman Aviation.

His rhododendron garden impressed everyone who visited it, including the people at Scotts who featured him on the cover of their catalogue.

Al was president of the NY Chapter from 1995 to 1997 and received its Bronze

Society News

In Memoriam continued

Medal award in 2001. He has always helped out in any capacity that he was assigned and for years served as the chapter's nominating committee chairman.

We all have our memories of Al. One of mine was when he told me the first year I was a member that he thought I would make a great chapter president. I've laughingly told him many times over the years since then that he gave me "the kiss of death," for I now signed on for my third term as president!

We'll all miss you, Al!

Jim Fry, NY Chapter President

Rhododendrons International, a new On-line Rhododendron Journal Accessible to all on the ARS Website

Rhododendrons International is a new on-line rhododendron journal not associated with any existing rhododendron organisation (but supported by all existing organisations) that will bring forward articles in English on any aspect of rhododendrons that are perceived to be of wide interest to rhododendron enthusiasts world-wide. It is being made available at no cost on the websites of most, if not all, of the world's rhododendron societies and organisations. The first volume, accessible on the ARS website as three geographically-based parts because of the large size of the volume, contains descriptions of the existing 16 world rhododendron societies and organisations, prepared by members of the respective societies. Material for future issues that merits wide distribution will largely be drawn from modified articles published in existing rhododendron society journals. Future issue publication dates are likely to be annual, but this will depend on the timing and amount of material submitted for publication. Articles for consideration of publication should be written in English, which along with photos can be submitted to Dr. Glen Jamieson at rhodojournal@gmail.com with "Rhododendrons International" in the subject line. Further submission information is in the "From the Editor" introduction in *Rhododendrons International*, Volume 1.

This initiative was conceived and developed by the *JARS* editor Glen Jamieson, with the huge assistance of the *JARS* assistant editor Sonja Nelson who volunteered to do the layout work. We both thank the ARS Board for their support in this endeavour, and for permitting this new journal to be placed on the ARS website.

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- 2018** ARS Annual Convention, Germany (decision pending)

- 2019** ARS Annual Convention, Philadelphia, Pennsylvania. Board Meeting. Dates to be announced.

- 2020** ARS 75th Anniversary Convention, Portland, Oregon. Board Meeting. Dates to be announced.

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R. 'Flamenco Dancer'.

The Pana'ewa Rainforest Zoo's Vireya Collection in Hilo, Hawai'i

Sherla Bertelmann
Keaau, Hawai'i

Photos by the
author



It was “one man’s dream” to find a place to showcase vireyas in Hawai’i for the public. Robert “Mitch” Mitchell started a search and, after checking out many locations, decided that the Hilo zoo was the perfect place. It was centrally located, had lots of area to be developed, had many local and tourist visitors, and had no entrance fee. In 2000, an agreement was signed between the Hawaii ARS Chapter and the Pana’ewa Rainforest Zoo, beginning what has now become our chapter’s longest on-going project.

The zoo has also become important to our education out-reach program by providing us with a venue to put on both vireya education workshops and to give away vireya trusses and plants to the public. Every zoo work party also gives us another opportunity to talk about vireyas with visitors.

While to date we’ve had a good run, with not needing to do much more than garden maintenance such as weeding, pruning and fertilizing, after 15 years the vireya collection is now in need of an update and rejuvenation. A recent donation of new vireya species has been added and a new brick border to replace the decaying wooden hapu’u border has been installed, allowing the zoo’s vireyas to remain a showcase for rhododendrons in Hawai’i for many more years.

E komo mai! . . . Come on over and make sure your next trip to Hawai’i and the Big Island includes a visit to the Pana’ewa Rainforest Zoo and Gardens, and if convenient, please attend one of our Hawaii Chapter meetings. We would love to meet you and show you our vireyas!

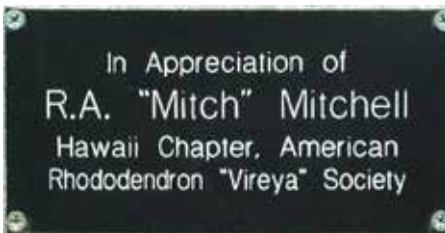


Sign at entrance to Zoo & Gardens.

See photos on pages 66-71.



Setting up for "Vireya Day at the Zoo."



Bench plaque at the Zoo & Gardens honoring Mitch Mitchell.



A one person "Vireya Seat" at the zoo.



Zoo outreach showing vireya plants, trusses and members talking to visitors. Our truss and plant giveaway at our annual Zoo Outreach.



"Flower flute" with tons of trusses for our annual zoo giveaway.



R. 'Kamrau Bay' from our zoo serpentine bed.



R. zoelleri.



Vireyas growing on a Hapu'u fern log at the zoo.



R. 'Cyril'.



R. rarelepidotum growing with "coconut smelling" *Oncidium* orchids.



R. macgregoriae.



R. macgregoriae.

Rhododendron ‘Vittatum’: Lifting a Rock

Donald H. Voss
Vienna, Virginia



Curiosity leads us to lift a rock to see what is under it. The results are often unanticipated.

Although the epithet assigned to a plant species or variety is not necessarily descriptive, it often describes a key feature of the plant. For example, the Latin *vittatum* means longitudinally striped, and the word is now in use as ‘Vittatum’, the cultivar epithet for an evergreen azalea with a striped corolla. Earlier it was part of Latin botanical names for the plant; namely, *Azalea vittata*, *Rhododendron vittatum*, and *Rhododendron simsii* var. *vittatum*. Curious to see whether the authors of those names provided useful descriptions of the plant so named, I lifted the rock!

The *International Plant Names Index* (IPNI; www.ipni.org) lists the earliest author of *Azalea vittata* as the French agronomist Dumont de Courset and the publication date as 1811. In Dumont de Courset’s (1811) massive work, the name appeared in a list of four species recently introduced into England from the Orient. The entry for *A. vittata* included the French common name “A. à bandes” (striped azalea). Authorship of the name was given as “Hort. angl.” (of English gardens). The article made no further reference to the species.



Fig. 1. *AZALEA INDICA vittata*. Van Houtte plate from *Flore des Serres*, vol. 9, following p. 76. Credit: biodiversitylibrary.org.

The *International Code of Nomenclature for algae, fungi, and plants* (ICN; McNeill et al. 2012) requires that, for valid publication, a description or diagnosis (or reference to one previously published) accompany the publication of a name. Lacking this, the Dumont de Courset name is a *nomen nudum* and was not validly published.

After British plant collector Robert Fortune published the name in *A Journey to the Tea Countries of China* in 1852, *Azalea vittata* Fortune was widely accepted as the first validly published name for the striped, ten-stamen, evergreen azalea. Fortune's primary task in China in 1848–1851 was the selection and collection of tea plants for shipment to northern India, but he was a connoisseur of ornamentals and shipped plants of many genera to nurseries in England. With respect to the striped azalea seen in the Pou-shan nursery near Shanghai, he wrote:

A most beautiful kind, having the habit of *A. indica* and half deciduous, had its flowers striped with pale blue or lilac lines, and sometimes blotches of the same colour upon a white ground. Not unfrequently it “sports” like the double-blossomed peach already described, and then, in addition to its carnation-striped flowers, has some self-coloured purple ones on the same plant. This species has been named *Azalea vittata*.

Another species allied to this, which I have named *A. Bealei*, had red stripes, and a third was mottled and striped in its flowers, the colours being still the same.

In mentioning *A. indica*, Fortune (as was common at that time) referred to *Azalea indica* sensu Sims. This was a misapplication of the Linnean name for a Japanese plant with five stamens to the Chinese plant with ten stamens, later named *Rhododendron simsii* by Planchon.

The plant with flowers striped with lilac lines was transferred from *Azalea* to *Rhododendron* by the French botanist Planchon in 1854. *Rhododendron vittatum* was published in *Flore des Serres* and in *Revue Horticole* (Paris). An illustration in *Flore des Serres* (labeled “AZALEA INDICA vittata”) is fanciful (see Fig. 1). The artist was apparently fixated on symmetry and sought to have nearly the same pattern of marking on each petal of the flowers shown. In publishing *R. vittatum*, Planchon listed *Azalea vittata* Hortul. (of gardeners) as a synonym, possibly unaware of Fortune's 1852 publication of that name. Under *R. vittatum*, Planchon listed two varieties, “Var. B *punctata*” and “Var. G *Bealii*, Hortul.” Each was accompanied by a brief Latin description. (B and G represent the Greek letters beta and gamma, used at that time to indicate varieties of a species.)

Until the end of May 2015, the *International Plant Names Index* (IPNI) showed the epithet of Fortune's *Azalea bealei* as *bealii*. Fortune named the plant to honor his friend Thomas Beale, with whom he stayed while in Shanghai. Under the ICN rules governing the formation of epithets from modern personal names, the correct spelling of the epithet is *bealei*. The IPNI entry now appears as *Azalea bealei*.

E. H. Wilson, a British-born American botanist whose many years of plant

exploration in China earned him the soubriquet “Chinese Wilson,” published “Azaleas of the Old World” in Wilson and Rehder’s 1921 *A Monograph of Azaleas*. Wilson noted that the corolla of *R. simsii* varies in color from rose-red through bright to dark red. He recognized *vittatum* not as a species but rather as *R. simsii* var. *vittatum* E. H. Wilson. Fortune’s *Azalea bealei* became Wilson’s *R. simsii* var. *vittatum* f. *bealei*, “characterized by its white flowers striped with red.”

In the 1990 Edinburgh revision of *Rhododendron* subgenus *Tsutsusi*, Chamberlain and Rae did not include *vittatum* as a recognized variety of *R. simsii*, listing only *R. simsii* var. *simsii* (corolla rich red to carmine) and *R. simsii* var. *mesembrinum* (corolla white to rose-pink). They commented that “. . . many cultivars are known. *R. vittatum* (Fortune) Planchon (*R. simsii* var. *vittatum* (Fortune) Wilson) is one of these cultivated forms with flowers white striped lilac-purple, occasionally with individual flowers that are pure white or lilac-purple.”

While pursuing their research on the Glenn Dale azaleas in 1996, R. T. West and W. C. Miller III (1996) looked into the status of the azaleas used by B.Y. Morrison as parent plants. They concluded that Wilson’s placement of *R. vittatum* in *R. simsii* is incorrect. They also asserted that Fortune’s use of “variety” and “sections” should be interpreted as meaning sports. Fortune’s (1852) “Tea Countries” is, however, essentially a travelogue, not a scientific treatise. His use of a “variety” simply refers to a different taxon, and “section” clearly refers to the time of blooming; i.e., early blooming (March, April) or later blooming (May). Despite Wilson’s experience as a plant explorer and collector (some ten years in China and two years in Japan), as well as his years of working in the herbarium of the Arnold Arboretum alongside Alfred Rehder, West and Miller III (1996) implied that the only consideration leading Wilson to place the striped azalea in *R. simsii* var. *vittatum* was the thin description provided by Fortune (1852) in “Tea Countries.”

Although I disagree with the West and Miller III basis for concluding that Wilson’s placement of the plant is wrong, I believe that there is a serious basis for challenging its placement in *R. simsii* as a botanical variety or a cultivar selection from *R. simsii*. The difference in corolla color and pattern between *R. simsii* (typically dark or deep red) and *R. ‘Vittatum’* (white with lilac-purple stripes) would require two mutations (*R. Griesbach*, pers. comm.). The probability of such repeated sporting is, however, low. Hybridization is a more likely explanation for the white corolla and lilac-purple stripes of *R. ‘Vittatum’*. Fortune’s *R. bealei* (white, striped with red), has a better claim to being a sport of *R. simsii*.

The descriptions of flower color and pattern by Fortune (1852, *A. vittata*), Planchon (1854, *R. vittatum*), and Wilson (1921, *R. simsii* var. *vittatum*) are consistent:

Fortune—striped with pale blue or lilac lines, and sometimes blotches of the same colour upon a white ground
. . . in addition to its carnation-striped flowers, has some self-coloured purple ones

on the same plant.

Planchon—with variegation of a soft violet, in the form of irregular and incomplete stripes from the periphery to the base of the pure white corolla.

Wilson—white, striped with lilac-purple, often irregularly so; sometimes the flowers are pure white or pure lilac-purple on the same branch, occasionally they are dotted or blotched with color.

The color and pattern of corolla marking on present-day examples of the evergreen *R. 'Vittatum'* (see Fig. 2) is also consistent with the descriptions provided by the three authors.

There is, however, a worm in the apple. Planchon's (1854) protologue (page 82 in *Flores des Serres*, volume 9) includes reference to an illustration, without stating a title, plate number, or page number; namely, "21. RHODODENDRON VITTATUM—*Azalea vittata* Hortul.—Fl. des Serr., ann. 1854 (avec figure ci-annexée)". The plate (see Fig. 1) is titled "AZALEA INDICA vittata" and follows page 76. In its lower left quadrant, a notation in very small type informs us that the plate originated in *Horto Van Houtteano* (at the private press of Van Houtte, the famed Belgian nurseryman and editor of *Flore des Serres*), which supplied the magnificent color plates in the *Flore des Serres* for several decades. If Planchon had submitted the plate (this is unlikely in view of the color—not to mention the pattern), he would have almost certainly labeled it as *Rhododendron vittatum*, not AZALEA INDICA vittata. Nevertheless, the reference to a plate creates an apparent link between the name and the plate.

The link is, however, specious. The plate is inserted at the beginning of Planchon's (1854) numbered descriptions of azalea species associated with the name *Azalea indica* (entry nos. 1-5), six pages away from *Rhododendron vittatum* (entry no. 21). The colors and pattern of markings shown on the plate bear no resemblance to the descriptions provided by Planchon (and, earlier, by Fortune (1852)). The moderate to deep purplish red color of markings in this plate is very different from the slightly reddish purple of *R.*

Another 'Vittatum'

In addition to the evergreen azalea cultivar *Rhododendron simsii* 'Vittatum' (the subject of this article), the *International Rhododendron Register and Checklist*, 2nd edition, also lists as 'Vittatum' a deciduous azalea of North American provenance. The deciduous 'Vittatum' was published in 1789 as *Azalea viscosa* var. *vittata* by William Aiton in *Hortus Kewensis*. Aiton referred to a Collinson manuscript's statement that the plant had been introduced [into England] in 1734. It is doubtful that the deciduous 'Vittatum' can still be found. The evergreen 'Vittatum' was the seed parent for 70 and pollen parent for six of the Glenn Dale azaleas, and it is still in collections.



Fig. 2. *R. simsii* 'Vittatum'. Credit: hirsutum.info. Photo by Tadeus Dauksza. Listed in Hirsutum as *Azalea simsii* var *simsii*.

'Vittatum' in the descriptions by Fortune, Planchon, and Wilson (compare Fig. 1 and Fig. 2). Article 9.3 of the ICN provides that original material includes "illustrations . . . upon which it can be shown that the description or diagnosis validating the name was based." Clearly, Planchon's (1854) description of *Rhododendron vittatum* is not based on the plate shown. Thus the plate cannot be considered as original material supporting validation of *R. vittatum* Planchon.

The relationship (or lack thereof) between *R. 'Vittatum'* and *R. simsii* cannot be definitively established without genetic analysis of the two plants. If one were to attempt the analysis necessary to prove or disprove that *R. 'Vittatum'* was derived in some way from *R. simsii*, the need for true-to-name specimens of *R. simsii* and *R. 'Vittatum'* could pose a serious problem. There are wild populations of *R. simsii* in various provinces of China, but variation may occur in and between populations of a species. And how can we determine whether a plant today labeled *R. 'Vittatum'* is genetically related to the plant seen by Fortune? We cannot.

The origin of the evergreen azalea 'Vittatum' remains an open question. In the *International Rhododendron Register and Checklist*, 2nd ed. (IRRC; Leslie, 2004), the plant is listed as a cultivar selected from *R. simsii*. It is widely accepted that the plant is of garden origin. A century and a half after Fortune saw the plant in a Chinese nursery and named it *Azalea vittata*, we do not know if this cultivar arose from hybridization or

from genetic mutations in *R. simsii*, from another of the 75 species reported as endemic in *Flora of China*, or in a plant of Japanese origin.

Can we unscramble the egg? It has been suggested that, because the minimum requirement for a cultivar name is the genus name plus a cultivar epithet, the matter could be resolved by using *R. viscosum* 'Vittatum' for the deciduous plant and *R. 'Vittatum'* for the evergreen plant of uncertain origin. If plants of the deciduous 'Vittatum' were to be found, it is likely that they would soon be referred to as simply *R. 'Vittatum'*, potentially causing confusion. It is highly desirable, therefore, to include both the Latin name of the species (genus name plus specific epithet) and the cultivar epithet when referring to either plant. Pending a definitive determination of its origin, we should continue to use the cultivar name *R. simsii* 'Vittatum', based on *R. simsii* var. *vittatum* E.H. Wilson, for the handsome evergreen azalea.

Although important questions remain unanswered, lifting the rock brought to light that Dumont de Courset's (1811) *Azalea vittata* is a *nomen nudum* (hence, not validly published), lead to correction in the IPNI of the spelling of *Azalea bealei*, and highlighted the importance of the color and color-pattern differences between *R. simsii* and *R. simsii* 'Vittatum' with respect to the question of whether they are genetically related.

Acknowledgments

The author is indebted to Dr. Joseph H. Kirkbride, Jr., and Dr. Alan T. Whittemore of the U. S. National Arboretum and to Dr. John Wiersema of the USDA Agricultural Research Service for advice on the application of ICN rules to the nomenclatural history of *R. 'Vittatum'*. Dr. Robert Griesbach of the USDA Agricultural Research Service provided information relating to the genetics of sporting. Mr. William C. Miller III read both an early and a late draft and provided pertinent background information that led to needed revisions. Ms. Barbara Bullock read the penultimate draft and made suggestions now incorporated. www.hirsutum.info simply requests acknowledgment, and lists Tad as the source of the photo.

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Don Voss sadly passed away Aug 12 after a brief illness. He was a member of the Potomac Chapter and a frequent contributor to JARS. He was thus unfortunately unable to proof this article. Please refer to his In Memoriam on page 50.

*Despite the Gardener's best intentions,
Nature will improvise.*

Michael P. Garofalo

Challenges in Using Computer Projectors in Presentations

Kath Collier
Boring, Oregon



Giving a talk can be intimidating, especially if you don't know the equipment that you need to use. The ability of equipment to fail at the most inopportune time is legendary and yet can be almost totally eliminated. Here are 10 tips that you need to know:

1. **Know your equipment.** Not all projectors work the same. Some will easily project in a lighted room, while others will not. It is always a good idea to test the equipment in the room that it will be used well in advance.
2. Most computer projectors are **temperature sensitive**. They won't start up quickly if they are cold.
3. Projecting a program requires **a lot of power** from both the computer and projector. Frequent mechanical failures are typically due to a loose cable, or lack of power to the computer which can be occur with a cable connection, bad plug, and bad plug on an extension cord.
4. **Remote control devices** (used to help move a frame forward) must be tested right before the presentation as the batteries have a tendency to run out quickly. In a pinch, a mouse or keyboard can be used.
5. Most projectors have a **keystone adjustment** that will help square up a display. This problem occurs when the projector is lower than the projection screen.
6. **Know what you are displaying—or not.** Computer projectors will display the **entire screen**—including perhaps information that you don't want others to see (such as a screen saver, other programs, etc.).
7. **Can't see the image** on the screen? There is usually a toggle switch on the computer keyboard that will toggle the view to the monitor, monitor and projector, etc. The

toggle is not consistent among computer manufactures but usually looks like a tiny monitor and is often accessed by pressing and holding a function control key (Fn) and a specific function key (such as F5).

8. **The colors** projected will often vary from the image displayed on your monitor (your monitor probably has better resolution than the projector). The image quality can also vary from projector to projector, and may depend on the age of the bulb in the projector. The color, contrast, and brightness can easily be adjusted for and tested during program development (assuming you have access to the equipment that you will use during the presentation).
9. **The back-up plan.** The light bulbs in the projectors can explode or burn out, the power can fail, and all kinds of havoc can occur. If the computer being used is not your own, there may be compatibility issues with the software, or versions of the software, being used. Having a backup plan (such as an additional projector) is always a good idea.
10. **The light bulbs** are typically very expensive and it may be cheaper to replace the entire unit than to replace a bulb. So you may want to be mindful of how long you are using the projector to maximize the life of the equipment.

A weed is a plant that has mastered every survival skill except for learning how to grow in rows.

Doug Larson

The Word: Lenticel

Bruce Palmer
Cutten, California



Photos by the author

Features in the bark of shrubs and trees are more obvious after flowers and some leaves are gone in late autumn and winter. I noticed the prominent lenticels in the bark of one of our flowering cherries (Fig. 1) a few days ago and thought that would be a good word for this issue of *JARS*. Lenticel is from the Latin *lenticella*, meaning “a small window.” Lenticels are not always as obvious as they are on cherry trees, but they are present in the bark of woody plants in general, including rhododendrons, and in some roots and fruits.

We’ve seen in a previous Word article that stomata on the undersides of leaves and on green stems allow and control the movement of oxygen, carbon dioxide and water into and out of leaves (Palmer 2013). Generally speaking, non-green woody stems do not photosynthesize but the live cells in and below the bark do carry on respiration. That means that oxygen and water need to get into the stems and carbon dioxide and water must exit. The outside layers of the bark act as a protective layer that should prevent the flow of any liquid or gas in either direction. That would be fatal to the living cells underneath. To address this, woody plants develop soft, spongy areas in the bark, i.e., lenticels, which allow gases to pass between living cells and the exterior through the otherwise impervious layer, thus solving the problem.

Lenticels develop while young stems turn from green to brown. Photosynthesis no longer takes place in the stems and the open storage spaces beneath stomata fill with



Fig. 1. Lenticels on flowering cherry.

cells that close the space and proliferate outward producing a spongy bulge in the bark that penetrates the impervious outer layer. The shape of lenticels comes from the fact that the stomata themselves are lens shaped. The porous nature of the cells in lenticels allows for free passage of water and respiratory gases.

Rhododendrons have lenticels, but often they are not as obvious as those in cherries. Young branches on rhododendron 'Starbright Champagne' show how the lenticels form (Fig. 2). They begin as lens-shaped light-colored ridges but soon turn dark. What appears to be a serious red rash in the illustration is a series of lenticels pushing outward through the bark.

Nearly all of them are lens-shaped and in this plant, are arranged vertically rather than horizontally as they are in cherries. Lenticels are not confined to the bark of woody plants. Respiratory roots also have lenticels. Fruits such as apples and pears, tubers such as potatoes and storage roots such as carrots have living cells, so they also require gas exchange with the environment and thus too have lenticels. The lenticels on a potato (Fig. 3) are not clearly lens-shaped, but have the same cell structure and function similarly.

When you look at the bark of your flowering cherry this winter, take a moment to appreciate the lenticels. Without them, the necessary impervious bark layers would prevent respiration in the living cells beneath. That would be fatal, and the tree could not survive without its lenticels.

Reference

Palmer, B. 2013. The Word: Stoma. *J. American Rhodo. Soc.* 67(3): 131-132.



Fig. 2. Lenticels on *Rhododendron* 'Starbright Champagne'.



Fig. 3. The small black spots are lenticels on potato.

Newly Registered Cultivar Names

Michael Martin Mills
North American Registrar of
Plant Names
Philadelphia, Pennsylvania

The following rhododendron and azalea names were approved and added to the International Rhododendron Register before August 23, 2016, by the Royal Horticultural Society, which serves as the International Cultivar Registration Authority for the genus *Rhododendron*. (Information on the registration process follows the descriptions of cultivars.)

Key

(a) – deciduous or evergreen azalea

(r) – elepidote or lepidote rhododendron

(v) – vireya rhododendron

(z) – azaleodendron

X – primary cross

(s) – seed parent of cross, if known

x – cross of an unnamed parent

* – not registered

H – hybridized by

G – grown to first flower by

R – raised by

S – selected by

N – named by

I – introduced commercially by

REG – registered by

Royal Horticultural Society color numbers in parentheses, unless another system is noted

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(r) 'Alison Suzanne Moser'

Elepidote rhododendron: 'David Gable' (s) X 'Kimberly'. H (2009), G (2015), N (2016), REG (2016): Percival B. Moser III, Bryn Mawr, PA. Flrs 6-8/ truss, broad funnel, 1.75 inches (44mm) long x 2.5 inches (64mm) wide with 5 rounded, emarginate lobes. Bud: deep purplish pink (N57C). Inside: pinkish white (N155B), blending to deep purplish pink (N66C) at margins, with a small strong purplish red (64B) throat, principally on dorsal side. Outside:

pinkish white (N155B), blending to deep purplish pink (N66C) at margins, with deep purplish pink (N66C) midveins. Calyx: 0.25 inch (6mm) long, strong yellow green (143C). No stamens. Truss 3 inches (76mm) high x 6 inches (152mm) wide. Lvs 2.5 x 1.6 inches (64 x 41mm), elliptic, obtuse base, rounded or broadly acute apex, flat margins, moderate olive green (146A), semiglossy. Shrub 1.8 x 1.8 feet (0.5 x 0.5m) in 6 years; intermediate habit. Hardy to 0°F (-18°C). Flowering midseason (May in Philadelphia). Etymology of name: a daughter of the hybridizer.



'Alison Suzanne Moser'. Photo by P. Moser.

(a) 'Dragon Fire'

Deciduous azalea: 'Hamlet' (s) X seedling of 'Arneson Gem'. H (1984), G (unknown): Robertha Arneson, Canby, OR; N (2015): Lynne Caton, Elma, WA; I (2016), REG (2016): Briggs Nursery, Elma, WA. Flrs 11-13/dome truss, tubular funnel, 2.9 inches (73mm) long x 3.75 inches (95mm) wide with 5 broadly acute lobes. Bud: vivid reddish orange (42A). Inside: light orange yellow (26D) to brilliant orange (26C), darker on lower two lobes; shading to vivid reddish orange (42A) at margins; vivid reddish orange (33A) prominent dorsal flare/blotch from base through most of upper lobe. Outside: light orange yellow (26D) to brilliant orange (26C), shading to vivid reddish orange (33A) at margins of upper three lobes. Orange pistil, 3 inches (76mm), with green stigma; orange stamens, 2.5 inches (64mm), with yellow anthers.

Not fragrant. Truss 4 inches (102mm) high x 6 inches (152mm) wide. Lvs 5 x 2 inches (127 x 51mm), elliptic, cuneate base, broadly acute apex, downcurved margins, moderate olive green (137A), semiglossy. Shrub 1.5 feet (0.5m) high x 1.0 feet (0.3m) wide in 3 years from tissue culture; intermediate habit. Flowering early season (mid-April in western Washington state).



'Dragon Fire'. Photo by L. Caton



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A donation to the Endowment Fund can make that happen and help the Society. Please mail your gift to: ARS Endowment Fund. P.O. Box 214, Great River NY 11739.

(r) 'Marshmallow Magic'

Elepidote rhododendron: ([‘Naselle’ x ‘Malemute’] x ‘Yellow Rolls Royce’) (s) X (‘Wizard’ x *R. irroratum* ‘Polka Dot’).

H (2003), G (2010), N (2016), REG (2016); Don S. Wallace, McKinleyville, CA; I (2016): Singing Tree Gardens, McKinleyville, CA. Flrs 12/dome truss, open funnel, 2.5 inches (64mm) long x 3 inches (76mm) wide with 5 or 6 rounded lobes. Bud: vivid purplish red (57C).

Inside and outside: white blending to light greenish yellow (1C) at base, with strong purplish pink (62A) picotee on all margins. Truss 4 inches (102mm) high x 6 inches (152mm) wide. Lvs 4 x 2 inches (102 x 51mm), oblong, oblique base, broadly acute apex, flat margins, strong bluish green (127B), semiglossy. Shrub 4

feet (1.2m) high x 5 feet (1.5m) wide in 10 years; intermediate habit, lvs held 2 growing seasons. Hardy to 10°F (-12°C), bud hardy to 15°F (-9°C). Flowering early (March in coastal northern California).



'Marshmallow Magic'. Photo by D. Wallace.



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(r) 'Michael D. Coe'

Elepidote rhododendron: 'Mars' x 'The Honourable Jean Marie de Montague' (s) X 'The Honourable Jean Marie de Montague'. H (1992), G (1996), N (2016), REG (2016): Richard Murcott, East Norwich, NY. Flrs 7/dome truss, funnel, 3 inches (76mm) wide with 6 wavy-margin lobes. Bud: strong reddish orange (31A). Inside: strong reddish orange (31A), with small, sparse dark spots in upper half of corolla. Outside: vivid reddish orange (32A). Reddish filaments, style and stigma. Truss 7.25 inches (184mm) high x 9 inches (229mm) wide. Lvs 5.5 x 1.25 inches (140 x 32mm), elliptic, cuneate base, acute apex, downcurved margins, medium green, matte. Shrub 4 x 4 feet (1.2 x 1.2m) in 9 years; intermediate habit. Hardy to -5°F (-21°C), bud hardy to 0°F (-18°C). Flowering midseason (May on Long Island). Etymology of name: for Michael D. Coe, chairman of the Planting Fields Foundation and grandson of William Rogers Coe, founder of the Planting Fields Arboretum, Long Island, New York.



'Michael D. Coe'. Photo by R. Murcott.

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(r) 'Moira Flynn Fischer'

Elepidote rhododendron: *R. degronianum* subsp. *yakushimanum*

'Koichiro Wada' (s) X unknown (open-pollinated). S (2016), G (2014), REG (2016); Percival B. Moser III, Bryn Mawr, PA; N (2016): John W. Fischer, Wayne, PA. Flrs 9/dome truss, funnel, 1.5 inches (38mm) long x 2 inches (51mm) wide with 5 rounded, wavy lobes. Bud: deep purplish pink (67C).

Inside and outside: light purple (75A)

blending to bluish white (N155A) at margins with strong yellowish brown (N199D) interior spots. Calyx: 0.25 inch (6mm) long, strong yellow green (144B). Truss 4 inches (102mm) high x 6 inches (152mm) wide. Lvs 4.5 x 1.75 inches (114 x 44mm), elliptic, convex, rounded base, broadly acute apex, downcurved margins, moderate olive green (146A), semiglossy. Shrub 2.5 feet (0.8m) high x 2 feet (0.6m) wide in 8 years; open habit. Hardy to 0°F (-18°C). Flowering midseason (May in Philadelphia). Etymology of name: a granddaughter of the nominant.



'Moira Flynn Fischer'. Photo by P. Moser.

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(r) 'P. Benjamin Moser IV'

Elepidote rhododendron: 'Sapporo' (s) X *R. fortunei* 'Lu-Shan'. H (2010), G (2015), N (2016), REG (2016): Percival B. Moser III, Bryn Mawr, PA. Flrs 9-11/ dome truss, funnel, 1.6 inches (41mm) long x 1.75 inches (44mm) wide with 5 rounded, wavy lobes. Bud: vivid purplish red (N57B). Inside: pinkish white (N155B) blending to deep purplish pink (68A) at margins, with deep reddish pink (77A) dorsal flair. Outside: deep purplish pink (68A). Calyx: 0.2 inch (5mm) long, strong yellow green (144A). White filaments, anthers and style; light green stigma. Truss 3 inches (76mm) high x 5 inches (127mm) wide. Lvs 4 x 1.5 inches (102 x 38mm), elliptic, cuneate base, acute apex, downcurved margins, moderate olive green (146A), semiglossy. Shrub 1.5 x 1.5 feet (0.5 x 0.5m) in 6 years; intermediate habit. Hardy to 0°F (-18°C). Flowering midseason (May in Philadelphia). Etymology of name: son of the hybridizer.



'P. Benjamin Moser IV'. Photo by P. Moser.



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(r) 'Paige Elizabeth Moser'

Elepidote rhododendron: *R. degronianum* subsp. *yakushimanum* 'Koichiro Wada' (s) X unknown (open-pollinated). S (2016), G (2015), N (2016), REG (2016): Percival B. Moser III, Bryn Mawr, PA. Flrs 16-20/dome truss, funnel, 1.75 inches (44mm) long x 2 inches (51mm) wide with 5 wavy lobes. Bud: deep purplish pink (N57D). Inside: white (NN155C) with a spotted blotch of brownish orange (165B) and deep red (185A). Outside: white (NN155C) shading to deep purplish pink (64D) along midveins. Calyx: 0.25 inch (6mm) long, light yellow green (N144D). White filaments blending to pink at tips, pink style, red stigma. Truss 4-4.5 inches (102-115mm) high x 7 inches (178mm) wide. Lvs 4 x 1.75 inches (102 x 44mm), elliptic, rounded base, broadly acute apex, downcurved margins, moderate olive green (146A), semiglossy. Indumentum: slight felted hairs, brownish orange (N167A) when mature. Shrub 2.75 feet (0.8m) high x 2.5 feet (0.8m) wide in 10 years; intermediate habit, lvs held 2 growing seasons. Hardy to 0°F (-18°C). Flowering midseason (mid-May in Philadelphia). Etymology of name: a daughter of the hybridizer.



'Paige Elizabeth Moser'. Photo by P. Moser.

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(a) 'Pink-a-Boo'

Deciduous azalea: (F3 selection of 'Gallipoli' x 'Cecile') (s) X unknown. H (1987), G (unknown): Robertha Arneson, Canby, OR; N (2015): Lynne Caton, Elma, WA; I (2016), REG (2016): Briggs Nursery, Elma, WA. Flrs 7-10/ball truss, broad funnel, 2.25 inches (57mm) long x 102 inches (4mm) wide with 5-6 frilly lobes, most flowers semidouble with 3 petaloid segments. Bud: moderate red (47A). Inside: deep purplish pink (58D), inner lobes and interior areas of outer lobes fading as flower matures; brilliant orange yellow (21B) solid blotch in upper lobe. Outside: deep purplish pink (58D). Calyx: 0.1 inch (2mm) long, strong yellow green (141D). Prominent pistil, style reddish fading to whitish, green stigma; semidouble flowers with reduced stamens (number and size). Truss 6 x 6 inches (152 x 152mm). Lvs 4 x 1.5 inches (102 x 38mm), obovate, cuneate base, broadly acute apex, flat margins, emerging with



'Pink-a-Boo'. Photo by Lynne Caton.

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reddish mottling, expanding to solid strong yellow green (143B). Shrub 2 feet (0.6m) high x 1.5 feet (0.5m) wide in 3 years from tissue culture; intermediate habit. Flowering midseason (mid-May in western WA).

References

Names conform to the rules and recommendations of the *International Code of Nomenclature for Cultivated Plants, Eighth Edition* (2009). Color names are from *A Contribution Toward Standardization of Color Names in Horticulture*, R.D. Huse and K. L. Kelly; D. H. Voss, editor (ARS, 1984).

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Online Errata

Vol 70. No. 3. Fig. 13, p. 87; Fig. 16, p. 89; Fig. 17. p. 90. The photographers of the Hirsutum photos of 'Polar Bear', *R. auriculatum* and 'Fragrantissimum' were unacknowledged. They were taken by Yves Tuset, Everard Daniel and Andrew Leverton, respectively.

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