

The Yak

Newsletter of the Fraser South Rhododendron Society

Volume 16 Number 6 June 2003



Fraser South Rhododendron Society
is a chapter of the
American Rhododendron Society

Meetings are held at 7:30 pm on the
third Wednesday of each month at:
United Church Hall
5673 - 200th Street
Langley BC

www.flounder.ca/frasersouth

2003 Officers

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This Month:

**THE FRASER SOUTH RHODODENDRON
SOCIETY'S RENOWNED**

ANNUAL PICNIC

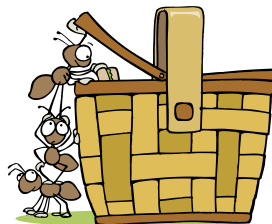
SATURDAY, JUNE 21ST

OFFICIAL COMMENCEMENT AT 3:00 PM

BUT COME AND HELP US SET UP

ANYTIME AFTER 1:30 PM

Quick Hits



Picnic:

Don't forget our annual picnic
Saturday, June 21st.

Time: 3:00pm

Location: Rhodo Ranch
25282 - 76th Ave. Aldergrove

That's north of the freeway - exit 66 at 232nd St.
or exit 73 at 264th St. are probably easiest.



Next Meeting:

Don't forget our next meeting

Wednesday, Sept 17th

Time: 7:30 pm

Location: United Church Hall



From the President

1) BEER BOTTLE TRUSS SHOW:

Our beer bottle truss show again proved to be a wonderful opportunity to see some spectacular trusses. The format of the show continues to be popular and judging by the members of the Chapter allows for full participation by all members regardless of the level of their expertise. Those members who left their trusses may like to know that they were taken to the MSA Labor Ward and to the Extended Care Unit at the MSA Hospital and were very gratefully received. The trusses created a fair amount of discussion and who knows - we may have some individuals who will want to attend our meetings. Special thanks to Wenonah March for organizing the truss show, Dave Sellars for chairing the meeting and Mary-Anne Berg for coordinating refreshments.

2) PLANT SALES:

Many thanks to all the growers and helpers who participated in the Plant Sale on Saturday, May 17th. The Chapter realized a significant profit which will go a long way to offset the expenses for this year. The date for the sale was determined by our growers once their commitment to the Island Chapters had been fulfilled. Their decision was made with the full knowledge that many of the Chapter members would be unable to participate because of their involvement in the Portland Tour. Unfortunately, this resulted in a heavy work load for the participants in the plant sale. Hopefully, this year we can plan further ahead and try and avoid a similar conflict of activities.

3) JUNE PICNIC:

The June Chapter Picnic will again be hosted by Trevor and Doreen Badminton at the Rhodo Ranch. Assistance with set up at about 1:30 and with break up would be much appreciated. Sue Klapwijk has once again generously agreed to coordinate the food, which I am sure will be as varied and scrumptious as in previous years. Leigh Mikitka is soliciting donations for the auction, and your willingness to part with previous treasures would be much appreciated. If you have friends with deep pockets who enjoy the fun of auctions, bring them along with you.

4) ELLA CRABB GARDEN:

A work party will be established to help clean up the Ella Crabb Garden at St. Andrew's Church as soon as the renovations have been completed.

5) SPECIES STUDY DAYS:

The Species Study Days have again been a success and Steve Hootman has indicated a willingness to repeat the course. Already twelve of this year's participants have committed themselves to the program for next year. The program was fully subscribed this year and hopefully, this will again be the case for 2004. If you have any interest at all please confirm your spot as soon as possible. The study group is limited to a maximum of thirty persons.

6) PORTLAND TOUR:

The Portland Tour was a wonderful success. Norma Senn will be providing a full report in the September "Yak", but in the meantime we can offer a few pictures courtesy of Chris Klapwijk.

Mike Bale

LAN SU YUAN

Classical Chinese
Garden
Portland, OR



Photo: Chris Klapwijk



From the Editor

This Month: This month is our last function for the year - our annual Potluck Picnic and Auction. It will be held, as appears to be the happy tradition, at the home of Trevor and Doreen Badminton - "The Rhodo Ranch" - at 25282 - 76 Ave. in Aldergrove. The official start time is 3:00pm but we could use some help setting up anytime after 1:30pm. Don't forget to bring some articles for the auction - there should be lots of fun, lots of bargains and hopefully lots of funds raised for next year's operating costs.

Next Month: Well, there isn't really a "next" month. Our next meeting will be in September, and it will be, as usual, on the third Wednesday at 7:30 pm. That makes it, according to my calendar, Wednesday, September 17th. I look forward to seeing everyone again after the summer break, but want to say now how much I have enjoyed this past year, and how much I appreciate all the support I have been given. Working on The Yak has been both a joy and a trial, but I am not prepared to give it up yet. Next year *will* be better!

Last Month: Although I was not able to attend last month's Annual Beer Bottle Truss Show, it was, by all accounts a resounding success. And here are the official winners:

<u>Class No.</u>	<u>Description</u>	<u>Winner</u>	<u>Species/Hybrid</u>
1	Rhododendron (lepidotes)	Vern Finley	cinnabarinum
2	Azalea (deciduous & evergreen)	Lori Bayes	kusianum KomoKulsham
3	Hymenantha (elepidotes)	Lori Bayes	sanguineum
4	Any lepidote hybrid	Lori Bayes	Lady Roseberry x cinnabarinum
5	Any deciduous azalea hybrid	John & Gael Dodd	seedling ?
6	Any evergreen azalea hybrid	Colleen Forster	Blue Danube
7a	Red hybrids <6"	Les Clay	Lem's Stormcloud
7b	Red hybrids >6"	Mike Trembath	Lem's Stormcloud
8a	White hybrids <6"	Larry Morton	Helene Shiffner
8b	White hybrids >6"	Lori Bayes	Phyllis Korn
9a	Pink hybrids <6"	David Sellars	Lem's Cameo
9b	Pink hybrids >6" and <10"	Alex Paul	Lem's Monarch
9c	Pink hybrids >10"	Mike Bale	Viennese Waltz
10a	Yellow/cream hybrids <6"	Lori Bayes	Lakeside Horizon
10b	Yellow/cream hybrids >6"	Vern Finley	Pineapple Delight
11	Mauve & Purple hybrids	Larry Morton	Colonel Coen
12	Orange hybrids	Les Clay	Leda
13	Bi-color hybrids	David Sellars	Lem's Cameo
14	"What's It Called" (new, non-registered)	Alan Kilvert	Snow Queen x Albatross
15	Truss with best fuzzy foliage	Mike Trembath	?Cricket x yak
16	Best Blotched	Colleen Forster	Bariton
17	Best Speckled	Les Clay	Kelly
18	Most Lurid	Les Clay	Edwin O. Webber
19	Best Last Year's Truss	Les Clay	Clay hybrid
20	Most Elegantly Weevil-Notched	Wenonah March	Peeping Tom
21	Best Hammerhead	Vern Finley	Lem's Cameo
22	Most Flaccid	Larry Morton	Medusa
23	Best Miniature Truss (under 6")	Norma Senn	campylogynum
24	Most Fragrant (Az. Or Rhodo)	Larry Morton	Irene Koster

Aggregate Winners (tied with 5 each)

Les Clay & Lori Bayes

Congratulations to all!

Brenda Macdonald



COMPANION PLANTS

D is for DORONICUM
the Leopard's Bane family
Family: Asteraceae

The Leopard's Bane (though far be it for me to imagine such an effect on any feline!) is a curious sight in the spring garden, mainly because of the shock value. I tend to think of any yellow daisies as a summer and fall staple, and they seem rather out of place among

Bergenia, Aquilegia, and late tulips. That being so, they are still a welcome and cheerful sight when spring days are dull and rainy.

They are not fussy as to soil, just moisture retentive but well draining - a nice mix of sand and humus suits them fine. Even though they mostly go dormant during the summer, they should not be allowed to dry out, and in light dappled shade, that should not be a problem. They will naturalize in a woodland garden, and several of the named varieties do come true from seed, or the rhizomes can be divided in early fall to share or replant; in fact they improve if divided every four years or so. The blooms also last well when cut for the table.

Flowers come as single or double daisy forms, and only in shades of yellow. Dwarf forms, such as 'Gold Dwarf' at only 10 inches tall, tend to bloom earlier, in April. Blossoming then progresses through the doubles such as 'Spring Beauty' and 'Gerhard', to some of the large flowered ones like 'Miss Mason' and 'Harpur Crewe', which bloom into June, and stand to 2 feet tall. The heart shaped basal leaves are a nice shade of soft green that contrasts well with the dark rhododendron leaves, and if planted among Hostas, Astilbes, or Campanulas, their foliage will fill in spaces for the summer months.

Aren't we so lucky to have so many choices of undemanding plants that can fill our gardens with color and beauty, and we hardly have to lift a finger to make them thrive?

Happy Planting

Colleen Forster



Doronicum 'Goldcut'
a double flowered type



Doronicum caucasicum



Up the Garden Path with Norma Senn

Ornamental Grasses June 2003

Ornamental grasses can add beauty, color and texture to garden beds and containers. Unlike our lawn grasses, ornamental grasses are not only easy to maintain, but many are also tolerant of tough climatic conditions. Some ornamental grasses have been selected from our native plants, so these are good additions for those of you interested in “nature-scaping”. They can stabilize soil and offer seed heads that attract birds. I’ve been increasingly impressed with ornamental grasses that survive being planted in places like parking lots and street medians where they thrive even though they get no care after planting.



Pennisetum glaucum ‘Purple Majesty’
an annual and ornamental millet;
a true member of the grass family.

Strictly speaking, the term ornamental grass should include only plants from the true grass family, Poaceae. But in horticultural practice, other plants that have long, narrow leaves are called ornamental grasses even though they are members of the rush and sedge families. This generalization creates such a huge group of plants that it is easier to discuss them by dividing them up into smaller groups based on various attributes.



Andropogon gerardii “Big Bluestem”
showing the three pronged seed head which gives it its
other common name “Turkey Foot Bluestem”

Annual grasses like the new All America Selections winner, ‘Purple Majesty’ ornamental millet, are those that only live for one year, then they set seed and die. Perennial grasses like Big and Little Bluestem (*Andropogon* sp.) or Sheep Fescue (*Festuca ovina*) live for more than two years. There are grasses from milder climates than ours that are perennial in their native habitat, but behave as annuals in British Columbia. Japanese Blood Grass (*Imperata cylindrica*), Purple Fountain Grass (*Pennisetum setaceum* ‘Rubrum’) and Fiber Optics grass (*Scirpus cernuus*) are examples of this group.

Grasses are also classified as warm-season or cool-season grasses. Warm-season grasses grow best at

high summer temperatures, for example between 27 to 35C. Typically, they grow rapidly from late spring through the summer, flower in late summer or early fall and then as the temperatures start to drop in the fall, they go dormant. Many of the warm-season grasses are very beautiful in the fall because of their fall colors. As the plants go dormant, the leaves and stems gradually fade to soft shades of straw and tan. The faded tops should be cut back close to the soil surface in early spring to tidy up the plants and create room for new spring growth.

Cool-season grasses prefer lower growing temperatures, ideally between about 15 to 25C and most flower early in the summer. They may go dormant during the summer if high temperatures persist. In the mildest areas of the province, some cool-season grasses are evergreen and the winter foliage takes on colors of reds or plums. However, in colder areas, the entire tops of most ornamental grasses tend to die back completely and the plants overwinter by their root systems.



Phalaris arundinacea 'Picta', an ornamental form of Canary Reed Grass which tends to run if not contained.

Grasses are also referred to as being either running or clump grasses, based on their growth habit. Running grasses produce rhizomes or stolons which are horizontal stems that allow the grass to spread out and colonize large areas. Lawn grasses like Kentucky Bluegrass and Creeping Red Fescue are examples of running grasses. This growth habit is ideal for lawns where we want a dense, hard-wearing sod to form, but running grasses can become serious weed problems if they get into our flower beds. While most running ornamental grasses are not nearly as invasive as our lawn grasses, care should be taken when selecting them to make absolutely certain that they won't take over a garden bed. Personally, I prefer to confine running ornamental grasses to containers to make sure I can keep them under control. The named varieties of *Phalaris arundinacea* (Dwarf Garters, Feesey's Form and Luteo-Picta) are examples of pretty running ornamental grasses.

Clump grasses remain in discrete tufts that gradually increase in diameter and are not invasive. However, in time, the centres of the clumps may die out, and then they need to be lifted, divided and re-established. Some of the loveliest clumping grasses are the fountain grasses (*Pennisetum*), Pampas grasses (*Cortaderia*) and *Miscanthus*.



Pennisetum setaceum 'Rubrum'
"Red Fountain Grass"

Ideally, the best time to plant ornamental grasses is in the spring when soil moisture is high. This allows plants to become established before the heat of summer. If sufficient soil moisture is available, cool-season grasses can be planted in the fall. However, since they have less time to become established before cold weather, these plants may be prone to winter injury. Since ornamental grasses are available as container grown plants, they can be planted out throughout the summer if adequate water for establishment is available. If you are interested in sowing your own seed, it is best done in spring. I've read that seed can be sown directly in the garden, but if I were doing it, I would start the seed in flats or pots and plan on transplanting at a later date. However, many ornamental grasses are difficult to start from seed and many are so slow growing that I recommend buying started plants.



Scirpus cernuus "Fibre Optics grass"
not a true grass, but a non-hardy sedge with wire-like translucent stems.

For most ornamental grasses, average garden soil is suitable. Some compost can be added to amend the soil, but excessive amounts of nitrogen may force lush, soft growth, so be sparing in soil amendments. At transplanting, make sure that plants are situated at the same height in the garden as they were in the pot; that is, don't plant them too deep or too high. As with all newly established plants, they will need good watering after transplanting and regular care for a couple of weeks until establishment takes place. After that, the amount of water needed will depend on your climate, soil and the grass species you've chosen. Mulching is very beneficial as this will help conserve soil moisture and deter weeds. A 5 to 10 cm layer of mulch is recommended. Once a year, fertilize the grass with a general garden fertilizer or a spadeful of well-rotted manure or garden compost.



Miscanthus sinensis
a clumping grass

There are several excellent references available to provide detailed descriptions of ornamental grasses and how to grow them. To learn more, a good reference is [The Encyclopedia of Ornamental Grasses](#) by John Greenlee and Derek Fell. This book has good pictures as well as a wealth of information about individual grass species. With the increasing public interest in ornamental grasses, new species and named cultivars are offered for sale at garden centres each year. Because there is so much variation in hardiness and climate tolerance among ornamental grasses, consult your local garden centre staff for recommendations on selecting appropriate species for your area.

Norma Senn



Japanese Gardens
Portland, OR

Photos: Chris Klapwijk



More Ado about Lumping and Splitting or The Evolutionary Tree and the Naming of the Branches

Members of the Rhododendron Species Foundation study group had a rare opportunity to view the cutting edge of rhododendron biosystematics at the April 19th session.

Dr. Benjamin Hall of the University of Washington and some of his research fellows have been working on using the DNA from different rhododendron species to infer ancestral relationships.

Dr. Hall theorizes that by extracting DNA and statistically analyzing how closely a specific gene on rhododendron species A matches the same gene on rhododendron species B, one can make certain inferences about how closely related the two species are.

These inferences are based on the understanding that the genetic material for any species changes over time. If two groups of rhododendrons are geographically isolated from one another, the genetic sequencing of the DNA of each group will begin to differ as random mutations and the pressure of environmental changes mould its development. It logically follows that the more recently the two groups were near one another to share genetic material through interbreeding, the more closely their genetic sequences would resemble each other's. Conversely, if the two groups had been separated for a much longer period of time, the accumulated genetic changes of each isolated group would show up as a greater number of differences in the DNA.

The placing of plant groups into coherent and logical relationship diagrams is both the bane and passion of many a botanist, for the human species seems to have an innate need to organize all the other species of the planet into tidy hierarchical representations. The very static nature of these representations dooms them to inaccuracy – since what of nature is static? – but still we try.

Our traditional tools have been simply to observe how the plant looks (does it have a woody stem? does it have red blossoms?), how it behaves (will it breed with that plant with blue blossoms? is it an annual or perennial?), and where it lives (is it a water plant? is it found only in Australia?). Techniques were refined over the years and we began to compare the number and types of hairs on a pistil rather than the colours of the blossoms, but it was still much the same approach.

However, it was clear that this was not the whole answer. One only needs to compare the Balfourian classification and the Edinburgh revision to appreciate that this was not so much science as art – the creation, literally, of complex diagrams of relationships between groups of plants based on little more than what looked logical and apparent.

And in fact, some of the findings made by Loretta Goetsch and Dr. Hall seem to indicate that how things look is not necessarily how they are.

For now we have a new tool to help us. Just as traditional taxonomy is done by comparing similar flower parts, molecular systematics makes inferences about relatedness by lining up corresponding regions of DNA and scoring the differences and similarities.

Dr. Hall and co-workers proceed by extracting DNA and using chemical analysis to determine the sequence of base pairs in the same gene for different rhododendron species. The extraction of DNA is old hat now – it is the development and application of the powerful statistical programs used to analyze the raw information which make this sort of research possible.

Of course along with a new science one gets to enjoy a new language. This is the language of “biosystematics” involving the classifying of plants into “monophyletic groups” or “clades.” And then there is the “bootstrapping” value, the statistical evaluation of how closely related one plant is to another plant based on the similarity of the sequences of those same four “building blocks of life” we learned about so long ago, the good old base pairs of A and T, C and G. Not to mention the use of “parsimony” in “deriving evolutionary trees based on molecular sequence data”, which pretty much boils down to: you base your theory of the relationships between all these plants by choosing the path of least effort, or at least the fewest number of changes.

In a rhododendron species that, over time, has been reproductively isolated from other species, random mutation introduces DNA changes that are distinctive. Most such changes simply alter DNA at a single point, changing a single base pair, an A to G, or a C to T, etc. However, sometimes, although it is rare, there are major changes that insert or delete hundreds of base pairs. These major changes are very useful in finding relationships between major taxonomic groups, such as sections or even subgenera.

Most of the analysis done by Loretta Goetsch and Dr. Hall is based upon the patterns of the localized point differences (A instead of G, C instead of T, etc) seen when DNA sequences of the same gene from different species are aligned side by side. For example:

R. lapponicum ATTA**CT**GAGCTACAGGAT**CGA**
R. nivale ATTATTGAGCTGCAGGATCAA
R. macrophyllum ATT**GCT**CAGCT**GCG**GGATCAA

In this region of the DNA, *R. macrophyllum* differs from *R. nivale* at 4 positions and from *R. lapponicum* at 5 positions. The top two species differ at 3 positions.

The pattern of these changes suggests that changes from G to A at position 4, C to G at position 7, G to A at position 14 and A to G at position 20 all occurred somewhere between *R. macrophyllum* and the common ancestor of *R. lapponicum* and *R. nivale*. This assumption follows the principle of parsimony – that the schematic using the smallest number of evolutionary changes which can accommodate the data accumulated through DNA analysis is most likely the correct schematic.

In practice, molecular systematics is done with sequences of many hundreds of DNA positions for as many as 100 to 200 species. Modern desktop computers, or even laptops, allow the use of computer programs that can identify within a few hours the most parsimonious diagram relating different rhododendron species.

So, what did Dr. Hall end up with? An organizational chart that makes the current differences between lumpers and splitters look picayune.

Based on their preliminary findings, Hall and Goetsch would divide the genus *Rhododendron* into three major

clades and one minor one. That is, there are three groups for which each of the members share a common ancestor that is not an ancestor of the other two groups.

In fact, Dr. Hall is such a lumpers that he would include not only the members of the former genus *Ledum* under the “Rhododendron Clade”, but also include members of the genus *Menziesia* (such as our local “False Azalea”, *Menziesia ferruginea*) under the “Azalea Clade”.

The first of the groups is the “Rhododendron Clade”, which comprises the Lepidote rhododendrons and the former *Ledum* species, which also have lepidote scales.

In the second group, the Elepidotes show exceptionally strong evidence of being closely related to the Section Pentanthera azaleas, and also to *R. canadense* (but not *R. vaseyi*) of Section Rhodora. Statistical analysis of DNA shows 99% support for this “Hymenantes/Pentanthera Clade”.

The third group, the “Azalea Clade” contains just about everything else, including, according to Dr. Hall, those members of the genus *Menziesia*, as well as *R. albiflorum*.

The minor clade consists of species previously classified as Section Choniastrum. Choniastrum is clearly separate from the three major groups, but its relationship to them is still to be determined.

And, in agreement with other workers, they classify *R. camtschaticum* as a non-rhododendron.

Of course, like all other things scientific, these findings are open to interpretation. We choose a few genes on a few chromosomes and we compare the way the pairs of proteins line up. It is very possible that further research of this kind will modify the initial findings, but in the meantime, looking at results that force us to rethink the relationships between all those rhododendrons we know and love is very exciting indeed.

Brenda Macdonald

