



"Niagara Rhodo" Newsletter of the The Niagara Chapter, Rhododendron Society of Canada January 2010

Our Purpose: We are a non-profit organization whose aim is to promote, encourage and support interest in the genus *rhododendron*.. **Our goal is to encourage gardeners to grow and appreciate these plants, by providing educational meetings with knowledgeable speakers, access to topical publications and hosting joint meetings with other chapters.**

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Word of Caution

By becoming a successful grower, the reader will be exposed to a contagion for which there is no cure. Once infected with an appreciation of rhododendrons and azaleas most gardeners spend a lifetime collecting these most beautiful of all plants.

H. Edward Reiley



1. President's Message

As the days grow longer, once again we focus on how to enhance our gardens in the unfolding year. The Niagara Region Rhododendron Chapter encourages sustainability of our gardens and the *prima-donnas* -- rhododendrons and azaleas - for a vibrant display of color. We also work at sustaining relationships with other ARS Chapters, local horticulture clubs, Niagara College, and plant nurseries for new ideas/plants and outreach to the community.

Since rhodos are not native to this area, we have an ongoing education role in disseminating the basic principles of growing rhodos -- the right soil, the right location and the right plant. Our Plants for Members Program (P4M) which involves obtaining cuttings of proven performers, rooting them by specialists, and then growing them, to provide them at cost to members, is highly successful. We have approximately 250 plants in the pipeline, most being difficult-to-obtain cultivars.

As in previous years, you will be able to check out, on our Web site, plants to be available at our April 17th 2010 Annual Plant Sale. The popular Advance Order Option will be available again in 2010.

The Niagara Region Rhododendron Chapter provides these value-added services to you, our members, helping to ensure sustainability of your gardens.

Our efforts to provide information about rhododendrons and azaleas in the community include encouraging development of rhododendron and azalea test and demonstration gardens. To this end, the Niagara Chapter sponsored development of the demonstration garden at Niagara College. More recently, the Chapter has worked with the Brueckner family to develop plans for test gardens and a test program for the Brueckner hybrids . The plan is to involve all interested Niagara members in the local testing, throughout southern Ontario, of rhododendron hybrids developed by Dr. Joseph Brueckner of Mississauga. (*Dr. Brueckner's description of his work is available at*

<http://www.rhodoniagara.org/brueckner.htm>) Details about this plan will be made available later this spring.

Consistent with this new challenge, Nick Yarmoshuk, our Board Member, has taken on a new role with the ARS as Chair of the Test and Display Garden Committee. This committee serves to encourage development of local test and demonstration rhododendron gardens and to identify ways in which such Rhododendron projects may be developed within resources available to individual chapters. This may provide new opportunities for projects underway at Niagara College and at the Vineland Research and Innovation Center. Information on the work of this committee will be available as it develops.

In the meantime, your thoughts about the activities of the Chapter are important to us and we would welcome any and all ideas Please share your ideas with us at postmaster@rhodoniagara.org .

None of these services would be possible without the support of all members and indeed of the larger community of gardeners. A group of Board members and other volunteers participated in various activities: Bruce Clyburn, Sue Gemmel, Lil Haworth, Dave Hinton, Suzie Janzen, Marie Johns, Ray Kaczmariski, Alice Klamer, Marian Little, Mike Little, Neil Miles, Peter Phelps, Gordon Polych, Marilyn Polych, John Perkins, Carolyn Poulter, Irma Purchase, Elly Smith, Louise Story, Rosemarie Walsh, Wanda Yarmoshuk, Pete Zwaagstra participated, assisted or offered their help in one way or another. If someone's contribution may have been inadvertently overlooked, so please forgive me. **To one and all, Thank You.**

Our organization provides tremendous value -- events with great speakers and topics, annual plant sale, a useful website, newsletter, etc. Above all, is the opportunity to socialize with fellow gardeners and to share our experiences. Let's make 2010 a banner year for our gardens and our organization!

Best wishes to you and your families for a healthy and prosperous New Year.

Sondra Meis



2. Program for 2010

Sunday, February 7, 2010, 2 P.M.

RON RABIDEAU, In Search of the Best. Vineland Research & Innovation Centre, Rittenhouse Hall, Victoria Avenue, Vineland.

Sunday, March 7, 2010, 2 P.M.

KEVIN KAVANAGH, Pushing the Zones: Exploring Hardiness in Southern Ontario. Vineland Research & Innovation Centre, Rittenhouse Hall, Victoria Avenue, Vineland.

Sunday, April 11, 2010, 2:00 P.M.

SLIDE SHOW, DESCRIPTION & DISCUSSION regarding all varieties to be available at the Annual Plant Sale. Vineland Innovation & Research Centre, Rittenhouse Hall, Victoria Avenue, Vineland.

Saturday, April 17, 2010, 9:00 A.M.

ANNUAL PLANT SALE. Vineland Innovation & Research Centre, Former (HRIO), Victoria Avenue, Vineland.

Saturday, May 15, 2010.

Garden Tour, Members Only: T.B.A.

Saturday, June 13, 2009.

P4Ms Plant Sale for Members only. Venue T.B.A.

3. Meeting of February 7, 2010

In Search of the Best

Ron Rabideau is General Nursery Manager of Rarefind Nursery in New Jersey. A graduate in Plant and Soil Science from the University of Massachusetts Ron has participated in four plant and seed collection expeditions: China (Spring, 2000), Tibet (2002), Arunachal Pradesh, India (2005), and the Altai Mountains, Siberia (2007). A rhododendron and daylily hybridizer since 1987, and member of the American Rhododendron Society, Ron puts his passion for new plants to work seeking out new and noteworthy plants. On October 6, 2009, Ron delivered the Steele Lecture at the Atlantic Rhododendron Chapter.

An authority in his field, Ron will talk about the best new and old hybrid rhododendrons, as well as his plant expeditions in China and his breeding work at Rare Find Nursery in New Jersey.

Rarefind Nursery is an 11-acre nursery located at the northwestern tip of the famous New Jersey Pine Barrens. The nursery is centered around a four-acre rhododendron display garden in a natural wooded setting. The garden is home to a large and diverse collection of shrubs on the East Coast and contains many thousands of rhododendron seedlings from their own hybridizing efforts. Rarefind Nursery's web site contains a full listing of their offerings. Linking to the various sections presents the viewer with eye candy that goes far beyond Rhododendron and Azaleas. The web site is an important reference and information source.

<http://www.rarefindnursery.com/index.cfm/action/rareplants.htm>



Ron Rabideau on the Tuting Bridge

4. More on Propagation of Rhododendrons

Editor's Note: In the December 2008 issue of the *Niagara Rhodo* Diane Kehoe described how to root cuttings. The same techniques could be used for seed propagation.. The following article describes another technique used in propagating plants.

"Paul Chafe lives in Toronto and gardens in USDA zone 4b/5a near Sydenham, Ontario, just north of Kingston. He has recently earned an M.Sc. in biology from York University and is currently pursuing a Ph.D. in the same field. He has practical experience in Tissue Culture and establishment of tissue culture techniques. He has been a member of the Niagara chapter of the ARS since 2008, and is actively involved in amateur traditional plant breeding techniques in many plant groups including Rhododendron."

Tissue Culture for Everyone

by Paul D.J. Chafe

In recent years the propagation of plants in the laboratory (tissue-culture) has become commonplace. We're all familiar with growing plants from cuttings or seed, why is this any different? Without going into the complexities of plant hormones, hormone ratios, or proper aseptic technique, I will attempt to describe the process in a simplified form to take some of the mystery out of it!

The idea behind tissue culture is very simple: to propagate as many plants as possible using as little original tissue as possible. The small scale of cultured cells allows for a massive number of plants to be produced with minimum space. Once the growing medium, culture conditions, hormone balance, and plant being propagated have been decided, the work then becomes fairly easy to do, though it is labour intensive and time consuming. Enormous numbers of plants can be propagated in a relatively short time, using very little laboratory space. There are a few issues that can arise in tissue culture, but these will only be discussed once we have an understanding of the general process.

The first step in the tissue culture process is the selection of tissue to be cultured. This can be anything from young leaves to wood, or flower buds to roots. Even pollen has been successfully cultured to make adult plants! For Rhododendron the tissue cultured is usually stem-tips. Often, the culture vessel is as simple as an old baby-food jar that has been cleaned and sterilized, but there are specific tissue-culture containers as well. In the first step tissue is excised from the plant, and sterilized with either ethanol (alcohol) or dilute Sodium hypochlorite (bleach). The tissue is then rinsed a few times in

sterile distilled water and then placed in the culture vessel. Complete elimination of all microorganisms is essential in tissue culture since bacteria and fungus will outcompete and overwhelm cultured plant cells. At each stage in propagation, until the plantlets are potted up, the protocol calls for sterile technique. It may not sound that difficult, but if even a single fungal spore or bacterium remains in your medium, or on the tissue, then the culture will quickly be overrun.

The first stage of tissue-culture is known as initiation, and it lasts until the ex-plant (that is, the tissue that has been taken from the original plant to be cultured) shows growth, preferably in the form of shoot formation. This can take anywhere from a few weeks to many months. Next is the multiplication stage where the initial cell culture is divided into many starter-plants and these are grown on in culture. The starter plants can also then be divided, and this stage can, theoretically, continue indefinitely.

At this point in the process we have many identical starter plants, none of which have roots, since the hormone balance in the growth medium (described below) is geared toward shoot formation. The obvious next step is to establish roots on these starter plants. This is done through another transfer, this time to a medium containing a low percentage of a rooting hormone. Once the plantlets are established the next stage is to ready them for the outdoors.

Growing in sterile, high humidity conditions the plantlets are not able to survive a rapid introduction to the low-humidity world. It is, therefore, necessary to slowly acclimatize them to the weather they will be expected to contend with as adults in the garden. They are planted in soil and slowly introduced to outdoor conditions. Once they are established and acclimatized the plants are grown to a saleable size.

There are a number of tissue culture media mixtures available for sale, but all are mixtures of macro and micronutrients that are solidified with agar (think a slightly thicker 'Jell-O' type consistency). To these media are added plant hormones in different ratios and amounts, depending on the species being cultured, the type of tissue being used, and what plant tissue you want to recreate. The most commonly used medium for tissue culture is the MS-medium (Murashige and Skoog, 1962), but for Rhododendron the established protocols use 'Anderson's Rhododendron Medium' (Anderson, 1984). This medium was developed by Dr. Anderson of Washington State University (as well as Brigg's nursery, one of the leaders in Rhododendron tissue-culture). Dr. Anderson was the recipient of at least one Rhododendron Society research grant for his work in Rhododendron tissue-culture.

His medium, amended with plant hormones, has allowed for the establishment of specific protocols and the massive expansion of Rhododendron grown in culture.

Plants propagated via tissue culture are now widely available at nurseries. The ability to rapidly produce identical clones (usually identical, but I won't get into that here!) has helped reduce costs and speed the introduction of new cultivars. There are other applications for this technology, such uses as: rapid regeneration of transgenic (genetically modified) cell lines, propagation of disease free plants, production of plants with low germination rates, conservation of rare plants, tissues grown in liquid media can be used to generate proteins for use in bio-pharmaceuticals, joining distantly related species via cellular fusion, and others.

References:

1. Anderson, WC. 1984. A revised tissue culture medium for shoot multiplication of Rhododendron. *J. Amer. Soc. Hort. Sci.* 109:343-347.
2. Dixon, R.A. and Gonzalez, R.A. (1994) *Plant Cell Culture: A Practical Approach*. New York: IRL Press at Oxford University Press.
3. Murashige, T., & Skoog, F. 1962. A revised medium for the rapid growth and bioassay with tobacco tissue cultures. *Physiol. Plantl.* 15: 473-497.
4. Stafford, A. and Warren, G. (eds). 1991. *Plant Cell and Tissue Culture*. Buckingham (UK): Open University Press.



Tissue Cultured Plant in a Tissue Culture Container
Photo by Paul Chafe

Letters to the Editor

We welcome letters to the editor. Your comments, advice, thoughts regarding this publication and suggestions for topics would be most welcome.

Editor: Nicholas Yarmoshuk
Contact: rhodosrus@gmail.com

Coming in the February 2010 Issue

1. More on the 2010 Program
2. Kevin Kavanagh - Exploring hardiness in Norfolk County.
3. Collecting & Preparing rhododendron Seed
4. The 2010 ARS Seed Exchange
5. The 2010 Annual Niagara Chapter Plant Sale
6. The Brueckner Test Garden Project
7. Book review

Membership Matters !

In order to improve efficiency, to clarify procedures and to be consistent with practices of our sister organizations, we remind all our members and friends of the following:
Memberships in the Rhododendron Society of Canada, Niagara Chapter (RSC) and the American Rhododendron Society (ARS) are valid for the calendar year with effect on January 1, 2010.

Is your membership up to date?

To continue as a local member of the Niagara Chapter of the Rhododendron Society of Canada (RSC) your 2010 membership must be received by March 8th, 2010.

The benefits of a \$5.00 local membership (RSC)

1. Newsletters/notices sent by email.
2. 10% discount at the Annual Spring Plant Sale.
3. Advance notice of plants available and ability to pre-order for the Annual Plant Sale.
4. P4M (Plants for Members) available only to members.
5. Newsletters mailed to those requesting (\$10 membership fee).

Membership in the American Rhododendron Society (\$35.00 CDN) provides all the above benefits as well as receiving the quarterly *ARS Journal*, participation in the seed exchange and other benefits through the ARS office i.e. discount on books, eligibility to attend conventions.

Plan to renew if your membership has expired ~ either at our February or March meetings or by sending your fee to: Lillie Haworth, 4 Deer Park Court, Grimsby L3M 2R2 .

RON RABIDEAU, Sunday, February 7, 2010, 2 P.M.

In Search of the Best.

Vineland Research & Innovation Centre, Rittenhouse Hall, Victoria Avenue, Vineland.



Ron Rabideau on the Tuting Bridge





Ron Rabideau - Banana Hunter



Rhododendrons at Rarefind Nursery