



**Fredericton Botanic Garden
Association Newsletter**

**Bulletin du Jardin botanique
de Fredericton**

Vol 31 No2

Fall 2019

**Getting Things Done:
A Message from the President**

It's not unusual to get snow in October and November, but persistent winter-like weather socked in early again this fall, almost like last year. I'm sure that many gardeners share my sentiments that it would have been great to have a few more weeks of relatively mild snow-free weather to enable the completion of additional garden tasks but, looking back at accomplishments, the past two years have been highly productive for the Fredericton Botanic Garden.

Five new gardens were designed, constructed and planted between October 2017 and October 2019. These include an expanded Daylily Garden, a New Brunswick Literature Garden, a Peony Garden, a Pollinator Garden, and a Rock and Crevice Garden. The Daylily Garden was a spectacular blaze of colour and form in July 2019. Flowering plants could be seen in the New Brunswick Literature Garden from late April through early November. A few peonies in the Peony Garden that had been planted in late September 2018 bloomed this spring and summer, and work was done to address unexpected drainage issues that arose there. Construction of the Pollinator Garden was completed this summer, and plants were carefully selected and planted to attract hummingbirds, butterflies, moths, bees, wasps and other pollinators to this garden and the adjacent wetland meadow. Construction of a Rock and Crevice Garden was completed in October under the leadership of Steve Stehouwer and roughly 1/3 of the desired plantings have already been put in it.

Many new plants have also been added elsewhere. The holding/propagation beds are nearly full, have become a major attraction to visitors, and are in the best shape they have ever been in, thanks to the fine efforts of John Welling. Saplings of Red Spruce and White and Yellow Birch were planted to create groves

of these species. A Bur Oak was ceremoniously planted as a thank you to Don Murray, who is a retired employee of the Parks and Trees Division of the City of Fredericton and helped the Fredericton Botanic Garden since its inception. Work on an urban orchard has begun with plantings of a few apple and quince seedlings. Flowering plants and woodland ferns were added to the Hal Hinds Memorial Garden and the Rhododendron Garden, and a few native aquatic plants were placed in and near the ponds.

Tremendous progress was made in keeping weeds and invasive plants (especially Woodland Angelica) under control thanks to the hard work of over 30 volunteers who participated in Weeding Wednesdays between July and October, and the capable assistance of 6 summer students, three of whom were also artists in residence.

This increased activity in the Garden resulted in more interaction with visitors who provided encouraging feedback, and the implementation of an Artist in Residence program was successful in better engaging the public. A series of radio interviews featuring highlights of the Garden, the timely posting of photographs on social media of what's blooming in the Garden, the installation of new signs and maps throughout the Garden by Steve Heard, and the creation of a new brochure have helped bring new visitors to the Garden and provide them with information to enrich their experience.

Plans are underway to create a Wabanaki Healing Garden in 2020 to showcase plants that have been traditionally used as medicines by indigenous people, and some funding for this garden will be provided by the City of Fredericton and the Fredericton Community Foundation.

We hope that you are pleased with the progress we have made and that you will continue to visit and support the Fredericton Botanic Garden. A huge thanks to the many dedicated volunteers, generous



donors and supporters, summer students, artists and staff for helping the Garden to continue to evolve and improve.

The Board and staff of the Fredericton Botanic Garden send our best wishes your way for a very joyous holiday celebration, and a New Year filled with great health, happiness, peace and enjoyment of plants in your garden, the Fredericton Botanic Garden and the world around you.

Science in the Garden

Tall mountains, tiny plants

By Steve Heard (Professor, Biology, UNB).

Life clings tenaciously to even the least hospitable parts of our Earth: the hottest thermal springs, the deepest oceans, the driest deserts, and the highest mountains. While the species associated with hot springs and deep oceans would be a challenge for us to grow in our Garden, our new Rock and Crevice Garden includes alpine (and other) plants from around the world. Next season, when you admire what we've built, you'll notice a lovely diversity of plant forms – but you'll also notice some similarities. What makes an alpine plant an alpine plant?

The shortest answer to that question, of course, is “evolution”. All over the world, plants have colonized mountainsides, and have adapted to the conditions they've found there. But it's not just mountains. Arctic (or Antarctic, in the southern hemisphere) and high



Photo: Cut-leaf daisy, *Erigeron compositus*, in the new Rock and Crevice Garden. Photo S. Heard

altitude conditions exert similar selective pressures and can be tolerated with similar adaptations. That's why we often see arctic species atop mountains further south, and it's why we needn't go the Himalayas to find alpine-adapted plants. The cutleaf daisy pictured above, for example, occurs across Canada's far North, but also in the (modest) mountains of the Gaspé peninsula and Cape Breton Island. (In New Brunswick, it grows only in our Rock and Crevice Garden.) We call similar features evolved by different species in response to similar environments “convergent evolution”. Textbook examples include the fins of sharks and the flippers and flukes of whales, or the wings of bats, birds, and pterosaurs – but alpine plants show strong convergence too.

What convergent features do we see in alpine plants? Start with their size: they're short. A short plant in summer stays in the “boundary layer” near ground where winds are slower and temperatures are much warmer. A short plant in winter stays safely tucked under snow cover. Alpine leaves are often either succulent or densely hairy. These features reduce water loss, which is a threat in a place where soils are gravelly and well-drained and where wind exposure threatens dehydration. Leaves are often evergreen, which (just as in conifers) is an adaptation to a short growing season. You can't afford to spend the first month of summer growing new leaves, if the first month of summer is all you might get! Flowers tend to be large (compared with leaves and stems) and produced in profusion, to quickly attract pollinators that can be scarce at high altitude. In many species the flowers are cup-shaped and turn to the sun, so they offer a warmer microclimate that's another attraction for visiting pollinators.

So far, we've seen features that are obvious at first glance. There are hidden features, too. Belowground, many alpine plants are anchored by long, long tap-roots. Mountains (although we hope not our Rock and Crevice Garden) are continually sliding downhill, with the combination of steep slopes and unconsolidated soils meaning slips, slumps, and slides both sudden and gradual. A shallow-rooted plant wouldn't last long. At a microscopic level, alpine plants are adapted to cold and to dramatic swings in temperature. Their cells synthesize antifreeze molecules so they can survive overnight cold but still grow during the day – among other clever tricks. Finally, slow growth may seem like an odd candidate for an “adaptation”, but slow growth rates (and very long lifespans) let a plant eke out an existence where conditions are tough: not



just the cold and the drought, but low-nutrient soils and (at high elevation) lower atmospheric CO₂.

The alpine plants in our Rock and Crevice Garden are settling in to winter as you read this, and now you know why we think they'll be OK. When you see them next – by ski, or by waiting for spring – think about how their environment has shaped their appearance and their ecologies. Alpine plants are a testament to the toughness of life on Earth, and to the power of evolution that's made it that way.

News from our Pollinator Garden



Image: Monarch butterfly chrysalis in the Pollinator Garden; photo J. Goltz

This summer you may have seen us busy in the Garden – or you may have seen the result of our busy-ness, in the form of our new Pollinator Garden. Why pollinators? Well, many of the plants you love wouldn't be here without them. Among crop plants, for example, blueberries, cranberries, almonds, pumpkins, beans and peas, and many more depend on insect pollination – a service with a value in excess of \$15 billion/year just in North America. Our native plants are even more dependent on pollinators. But pollinators are in trouble, with threats beginning with pesticide use and habitat loss. The yellow-banded bumblebee, for example, is in steep decline, and the once-common rusty patched bumblebee is now endangered. Of course, it's not just bees: North America's most familiar butterfly, the monarch, is listed as endangered too.

It's against this backdrop that we've built our Pollinator Garden. This summer, we finished grading the beds and we planted a wide variety of pollinator-friendly plants – some to attract bees, some for hummingbirds, some for butterflies and moths. Among our plantings: milkweeds, the obligate host plant for caterpillars of the monarch butterfly. We were thrilled, in midsummer, to discover the cheerfully black, yellow, and white-striped caterpillars feasting on our Swamp Milkweed (*Asclepias incarnata*) – and later, to find the chrysalis pictured above, with its promise of adult butterflies to join the fall migration south. Not all gardeners rejoice when insects devour their plants; but at least amongst our milkweeds, we do.

The Pollinator Garden is resting now, frozen until spring like the rest of our landscape. But we'll be back at work in the spring of 2020. We'll be adding more plants, and also working on another important component of pollinator conservation: habitat. Our native bees, for instance, need more than nectar: they need nesting habitat. Depending on the species, that could be sandy soil, hollow plant stems, tunnels chewed in wood, or a variety of other things – so we'll try to provide them, and we'll also provide tips as to how you can do the same in *your* gardens.

Would you like to help us finish the Pollinator Garden? You can volunteer some labour for construction, planting, and weeding come spring; or you can make a donation to the Garden and ask us to put it toward our pollinators. (You can donate at any time, at www.frederictonbotanicgarden.com/support-us.)

It's been a busy summer for us at the Garden, with work on the Pollinator Garden, the Rock and Crevice Garden, and a lot more behind the scenes. We're proud of what we've built, and we look forward to the drone of bees and the flap of butterfly wings enlivening the Garden for years to come.

Talks and Events in the Garden

“Please Note: Locations for each event will be provided to our to members in announcements, and posted on our website and social media.”

Title: ***Seeking Insects in the Garden***

Speaker: Resident Artist Allison Green

Date and Time: Thursday January 16, 2020; 7:00 pm

Location: TBA



Title: Seed Cleaning Workshop

Workshop Leader: Steve Stehouwer

Date and Time: Saturday, February 15, 2020, 2:00 to 4:00pm

Location: TBA

This is a new workshop for the FBGA. It will cover the different ways to collect, store and clean seed. There will be a brief theoretical introduction followed by a number of practical demonstrations showing different methods for cleaning, packaging and storing your seed. You will learn how to clean seeds of all types, including ones that are difficult. Uncleaned seed will be provided as well as the tools to clean them. At the end of the workshop you can take home samples of seed that you have cleaned.

**Title: Starting Plants from Seed
'Jumpstart your Garden'**

Speaker: Steve Stehouwer

Date and Time: Thursday, Feb. 20, 2020, 7:00 pm

Location: TBA

Have you ever wondered when and how to start to grow plant seeds for your garden. Well worry no more. This talk will cover the timing for when you should start different kinds of seeds and different techniques for getting them to germinate. We will answer all your burning questions about starting seed early and give you the information that will enable you to have repeated success.

Annual General Meeting

Guest Speakers Cecilia and Anthony Brooks

Topic: Medicinal Plants Used by the Wabanaki (Indigenous Peoples)

Date and Time: February 22, 2020 1:00pm

Location: Unitarian Fellowship, 874 York Street

Seedy Saturday

Led by Steve Stehouwer

Saturday, March 14, 2020 1:00 - 4:00pm

Location: TBA

\$3.00 per individual \$5.00 per family

Children and teens are free

Once again it's that time of year when you will have access to hundreds of seeds for a minimal fee. There will be Vegetable, Herb, Annual and Perennial flower seed. There will also be some tree and alpine plant seed available.

Seed is provided by local seed vendors and club members. If you wish to bring seed of your own, please feel free, just remember to clean and label the seed properly.

Last year we had around 100 people attend. If you

don't feel comfortable with large crowds just drop in at around 3:30 pm. We look forward to providing you with seed as well as answering all your questions.

**Title: Management Plans for Odell Park
and Killarney Lake**

Speaker: Julie Baker

Date and Time: March 19, 2020 7:00 pm

Location: TBA

**Title: Charles Darwin's Barnacle, David Bowie's
Spider, and Pierre Magnol's Magnolias:
What's revealed When We Name Species
After People?**

Speaker: Steve Heard

Date and Time: April 16, 2020, 7:00 pm

Location: TBA

Title: The Role of Plants in Making Alcoholic Beverages

Speaker: Richard Tarn

Time and Date: Thursday, May 16, 2020, 7:00 pm

Location: TBA

Spring Fair and Plant Sale

May 31, 2020, noon to 4:00 pm

Location: Entrance Garden, 695 Prospect Street

**Title: Prose, Poetry and Plants: New Brunswick
Literature at the Fredericton Botanic Garden**

Speaker: Steve Heard

Date and Time: Thursday June 18, 2020 7:00 pm

Location: TBA

Spring Fair and Plant Sale

Submitted by John Welling

Well another year is almost finished & a fresh one on the way! It was a wonderful year here at the gardens with new garden beds popping up & holding beds overflowing.

The Spring Fair and Plant Sale this year was another great success with a profit of over \$5000.00. We had a great team of helpers, volunteers & plant donors again this year!

This show would not be possible without all your help! We can not thank you all enough for your support!

We have worked up our plant order for 2020 Spring Sale with Van Noort Nurseries. We'll have a wonderful selection for the show of favourites to new varieties, heritage tomatoes, peppers & herbs. There is also a large selection of plants in our holding beds this fall and these will be ready for the show!

Thanks to all that donated this year! This is a large part of our stock at the shows.



This year's show will be held on Sunday, May 31st on a beautiful sunny afternoon!

Wishing you all the very best for the holidays & the New Year.

Looking forward to a early Spring!

Crevice Garden

Submitted by Steven Stehouwer

It was planned that in the late summer or fall of 2019 the Fredericton Botanic Garden Association (FBGA) would be building a crevice garden. It was nearing the end of September and I felt that this project may not be done this year. Jim Goltz, told me, "don't worry we'll get it done". Well, wouldn't you know it but he did it!

On Thanksgiving day a group of volunteers got together for a few hours to get the crevice garden started. On the rock-gathering team there was Louis- Philippe Albert who generously provided a truck and trailer to gather and then dump the rock. Michael Stastny, Jim Goltz, Steve Heard and Tess Madigan did a lot of back breaking work to get the rock to the site. This rock was 2" to 4" wide slabs of flat rock. Some of the rock had to weighed close to 100 lbs.



At the site there were four of us, Dan Cyr, Cynthia Stacey, John Welling and myself, who under my guidance started to build the crevice garden. When all the rock was delivered Jim Goltz, joined us to continue placing rock, shovelling sand and then packing the sand in around the rocks. We finished around 1:00 pm. Then over the next 2 weeks Dan, Jim and myself, worked on finishing the crevice garden off. I was able to plant 168 small rock garden bulbs (like dwarf daffodils, irises, crocuses etc.) and 160+ rock garden plants in the crevice garden.



Hopefully, next spring we will have a good show of flowers with the 330 bulbs and plants in situ. We also hope to add another 300 to 500 more plants to fill in all the empty spaces.

We have had a lot of positive feedback from people walking by the garden which has been very encouraging. We hope you will visit the garden early next spring to see the blossoms open up.

facebook

Join the Fredericton Botanic Garden group page on Facebook to see announcements of events, pictures of the Garden

The Fredericton Botanic Garden Association Newsletter is published four times a year by the Fredericton Botanic Garden Association, Inc. The FBGA is a registered charitable organization for tax purposes. The objectives of the FBGA are to guide the establishment of the Fredericton Botanic Garden and to foster an awareness and appreciation of plants.

To obtain information on membership and to become involved in FBGA activities please contact us: **506-452-9269 PO Box 57, Stn. A, Fredericton, NB E3B 4Y2** or fbga@nb.aibn.com
Web: www.frederictonbotanicgarden.com

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Jardin botanique de Fredericton Botanic Garden

- Yes. I would like to become a member/ renew my membership with the Fredericton Botanic Garden Association

<u>Membership type</u>	<u>1 Year</u>	<u>2 Years</u>	Amount
Individual/Regular	\$20	\$40	
Family	\$35	\$70	
Student/Senior	\$15	\$30	
			\$ _____

Your information *Required

*First name: _____ *Last name: _____

*Address: _____ * Suite/Apt: _____

*City: _____ *Province: _____ *Postal code: _____

* Home phone: _____

Email: _____ Yes! I would like to receive the Newsletter by email.

- Yes. I would like to give a gift membership. Please complete the information above so we can tell the recipient who has gifted the membership.

<u>Membership type</u>	<u>1 Year</u>	<u>2 Years</u>	
Individual/Regular	\$20	\$40	
Family	\$35	\$70	
Student/Senior	\$15	\$30	
			\$ _____

Please send my gift membership to:

*First name: _____ *Last name: _____

*Address: _____ * Suite/Apt: _____

*City: _____ *Province: _____ *Postal code: _____

* Home phone: _____

Email: _____

- Yes. I would like to make a donation to the Fredericton Botanic Garden Association.

\$50 \$100 \$200 Other \$ _____ \$ _____

Charitable receipt required? Yes No

Date: _____ Cheque enclosed for \$ _____ total amount

Mail to: Fredericton Botanic Garden Association, PO Box 57, Stn. A, Fredericton, NB E3B 4Y2

