

# Alpine Garden Club of British Columbia



*Draba densifolia* growing in Sikanni Chief River  
Ecological Reserve

Volume 62, Number 1 Quarterly Bulletin, 2019



**AGC-BC  
2019**

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## Membership Renewals Due

If you have not already renewed your membership for 2019, please bring a cheque for \$30 to Membership Secretary, Jane Byra, with your name and contact info. Cheques should be made out to the Alpine Garden Club of BC and sent to:

Or renew online using your credit card through PayPal on our website  
[www.agc-bc.ca/membership-renewal](http://www.agc-bc.ca/membership-renewal)

**AGC-BC meetings** are held on the second Wednesday of each month except July and August in the Floral Hall, VanDusen Botanical Garden. Doors and Library open at 7:00 p.m. and the meetings start at 7:30 p.m. Please bring plants for the plant draw; the proceeds of which go toward paying for the hall rental. Don't forget to bring your coffee/tea mug.

## 2018 AGC-BC Upcoming Events

- **Feb 28 - AGC-BC Meeting \*NOTE Date Change\***
  - Panayoti Kelaidis: No End of Novelty Out of Africa
- **Mar 13 - AGC-BC Meeting**
  - John Mitchell: Plants from Wild to Cultivation: How Edinburgh Botanic Garden Features and Grows New Plants
- **April 6 - AGC-BC Annual Spring Show and Sale**
  - Van Dusen Floral Hall, 12:00 - 4:00 pm
- **April 10 - AGC-BC Meeting**
  - Ger van den Beuken: The Best Alpines of My Life
- **May 4 - AGC-BC Member Garden Tour**
  - Coquitlam-Pitt Meadows-Maple Ridge, 12:00 - 4:00 pm
- **May 8 - AGC-BC Meeting**
  - Claire Cockcroft: Asiatic Primulas: Clues to Growing Primulas After Seeing Them in the Wild
- **June 5 - AGC-BC Garden Tour**
  - E.H. Lohbrunner Alpine Garden, 6:00 - 7:30 pm

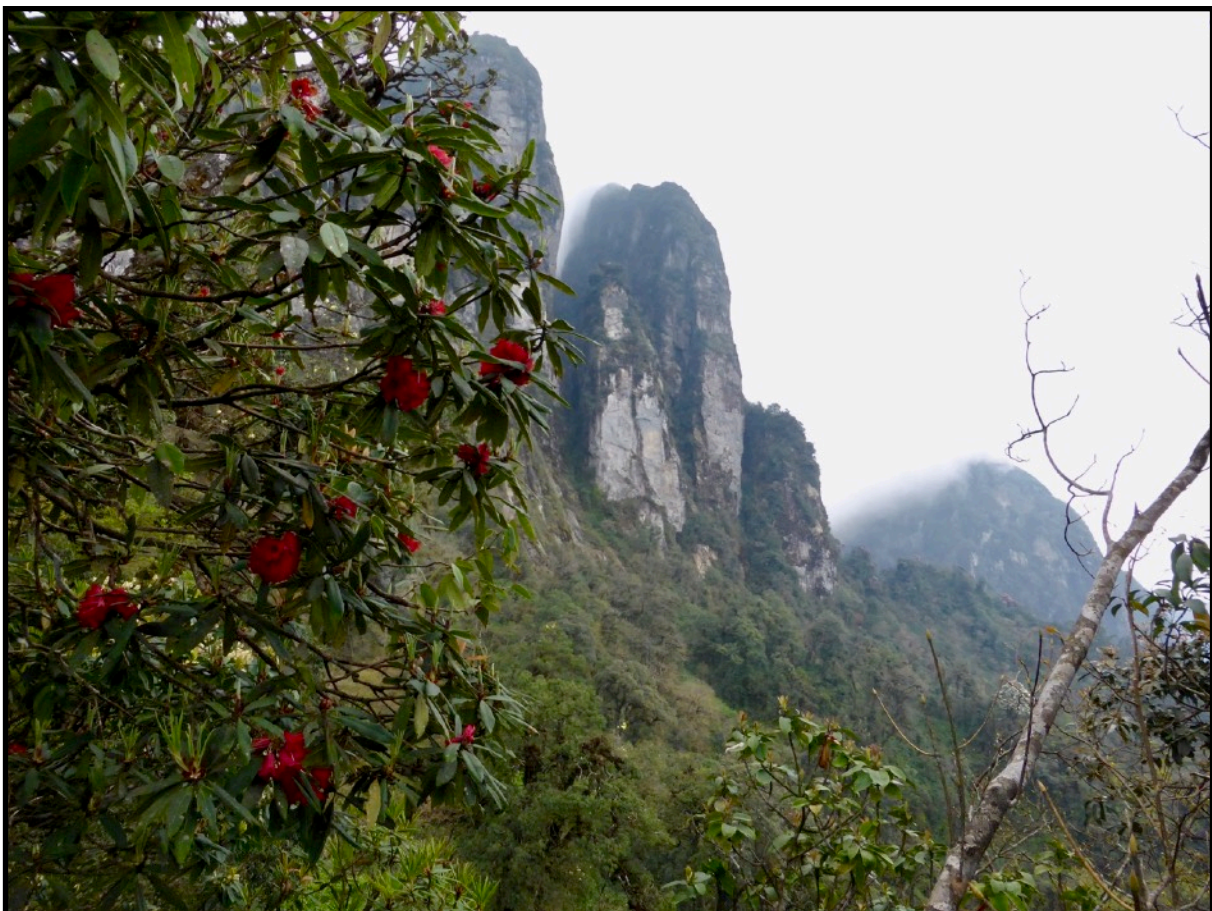
For more information, visit <http://www.agc-bc.ca/events>



## Related Events

### Darts Hill AGM

The DHGCTS is pleased to present Douglas Justice, Associate Director, Horticulture & Collections, UBC Botanical Garden as our featured speaker at the Society's AGM March 2, 2019 to be held at Emmanuel Evangelical Church, 17029 16th Avenue, Surrey, BC (doors open at 9:30 am). Douglas' talk is titled "Hiking the Mountains of Northern Vietnam". The flora of the mountains of northern Vietnam is renowned for its rich biodiversity, including an amazing array of rhododendrons, maples, conifers and herbaceous plants. Douglas has made three separate trips to Vietnam, hiking in a number of different areas and returning to some favourite places. Each trip has included a wide variety of collaborators from institutions in Vietnam and gardens in North America and Europe. We look forward to hearing about Douglas' amazing journeys to Vietnam to hunt for plants. Plan to attend and renew your membership for the nominal fee of \$20.00 to enjoy a lively meeting with a light lunch plus an afternoon tour of Darts Hill Garden Park with Celeste Paley.



*Rhododendron aff. tanastylum* in Vietnam.



## **Related Events**

### **VIRAGS Spring Annual Spring Show**

The Vancouver Island Rock and Alpine Garden Society's 2019 annual Spring Show will be held at Cadboro Bay United Church, 2625 Arbutus Road, Victoria, BC on Friday, April 5 from 1 pm to 8 pm and on Saturday, April 6 from 9 am to 3 pm. As well as show entries to enjoy, there will be plant and seed sales, displays, door prizes, and refreshments. The sale of club-grown plants will begin at 11:00 am Saturday. Admission is by donation.

For more information, visit [www.virags.com](http://www.virags.com) or email [virags.news@gmail.com](mailto:virags.news@gmail.com)

### **Botany BC**

Botany BC is an annual meeting of botanists and plant enthusiasts of British Columbia and is open to anyone interested in plants. Although Botany BC meetings are focused to British Columbia, we welcome all the plant enthusiasts from the neighbouring provinces/states, and from elsewhere in the world.

Botany BC 2019 will be taking place in the lovely Rossland and surrounding area starting the evening of Thursday June 20, 2019 through Sunday June 23, 2019. The event program and registration will be posted soon at: <https://botanybc.000webhostapp.com>

### **Nature Vancouver Summer Camp**

The 2019 Nature Vancouver summer camps will be held in the spectacular Niut Range, just to the west of Tatlayoko Lake, or two hundred kilometres west of Williams Lake. Located at the tree line at 2000 metres, the camps will offer abundant opportunities for botanizing, birding and rambling ranging from easy strolls to more vigorous all-day hikes. The first camp will run from July 21<sup>st</sup> to 28<sup>th</sup> with the second camp running from July 28<sup>th</sup> to August 4<sup>th</sup>..

For more information, visit: <https://naturevancouver.ca/summer-camps/summer-camp-2019/>

## From the Editor

*Laura Caddy*

As I sit and write this, taking a break from working on the layout of this issue, I'm half watching snow flakes fall outside my window. Vancouver it just starting to see the first signs of winter. I worry a touch about the plants in the E.H. Lohbrunner Alpine Garden, that are so far about 2-3 weeks ahead of last year. I know the flowers of the early *Narcissus*, *Galanthus* and *Eranthis* are tough and used to getting snowed on. It's more the swollen, pushing buds, and newly exposed leaves in combination with the upcoming forecasted low of -7 degree Celsius that has me concerned. It's days like this my usual harsh stance of "tough love" and "no babying plants" slightly falters.

So, I turn to the Bulletin to keep my mind off a forecast that may not even come to pass. I am fortunate to have a plethora of interesting articles to focus on! It is a great pleasure to have a submission from a former editor of the Bulletin, Grahame Ware, who has recently moved and is updating us on how his *Lewisia* collection is faring in their new home. We also hear from Dr. Kendrick Marr of the Royal BC Museum and some of the field work he and his colleagues have done in the alpine environment. Ben Stormes, curator of the North American collections at UBC Botanical Garden, has been gracious enough to contribute a book review of the newly revised Flora of the Pacific Northwest. The Plant Portrait feature returns in this issue, supplied by Ger van den Beuken. Be sure to catch Ger's presentation to the club in April if you can! And, continuing the unofficial public garden series, Darwin Carr enlightens us on the Dalhousie University Bicentennial Botanical Garden and its rock and alpine gardens.

There is lots of news and upcoming events in this issue as well, including the Seed Exchange Report. Many thanks to all the volunteers who make this wonderful part of the club happen each year! I assume most member will have received their seed, from our club and other exchanges, by the time the Bulletin reaches you, and I hope after an exciting day of sowing your new treasures you'll sit down, relax, and enjoy this issue.

## Editor's ID Challenge



Too easy? Too hard? Let me know at [bulletin@agc-bc.ca](mailto:bulletin@agc-bc.ca)



## Club News

### AGC-BC Seed Exchange Report

*Pam Yokome*

The AGC-BC Seed Exchange has wrapped up and been mailed out for 2018. This year we listed a total of 1375 different plant seeds from a total of 63 dedicated donors. Ann Jolliffe takes the prize with a grand total donation of 204 individual species! That said, some of the very desirable seed also came from people who only sent a few, so don't be discouraged! Smaller contributions are very much needed. The club has very dedicated seed collectors from around the world and it is always very interesting to see which seeds come from where, as they are not always what you might expect.

There were a total of 3714 individual packets of seeds ordered by 104 of our members with every order receiving over 85% of their first choices, most a much higher percentage. Much of the failure to fill an order was due to seed either promised but not sent in or seed that wasn't really seed. The single most requested seed was *Douglasia nivalis* var. *nivalis* with *Cyclamen purpurascens* second, followed by a tie for third between *Calochortus macrocarpus*, *Aquilegia scopulorum*, *Narcissus watieri* and *Rhododendron camtschaticum*. Other popular seed that we were short of were most often North American natives.

Seeds were mailed out Jan. 10 and 11, except for US members orders, which were held at their request, until the government shutdown was over.

The Seed Exchange is a big job with lots of dedicated volunteers both new and very experienced, ranging in location from Surrey to Vancouver to The Sunshine Coast. A fantastic learning experience and much gratitude for help and advice from the experienced leaders, Diana, Linda, Ruth, and Pam Frost, as well as to David for the website help. Holding part of the seed exchange at Darts Hill seemed so appropriate as Francisca Darts was an avid seed exchange participant. Many plants on the garden inventory have this exchange listed as the source.

Good luck with your seed germination and growing on. Looking forward to the 2019 Seed Exchange and all its wonderful choices.

## Club News

### Annual Christmas Potluck and Rare Plant Auction Report

*Laura Caddy*

This year we tried something new, and held the Annual Christmas Potluck and Rare Plant Auction at UBC Botanical Garden. This allowed members to avoid the crowds and competition for parking with the visitors at Van Dusen attending the light festival. The change in venue for this event was well received, and will likely return to UBC in 2019, as we are no longer able to book the Floral Hall at Van Dusen during the Festival of Lights.

As per tradition, Douglas Justice, with the help of Philip MacDougall, took up auctioneer duties. Many different choice plants were represented that inspired some good natured bidding and competition. This year the auction also included a couple of beautiful wreaths, as well as a sought after, signed copy of Christopher Gardner's out of print book *Flora of the Silk Road: An Illustrated Guide*. We raise \$1402 for the Planting a Promise: BC Agriculture in the Classroom Foundation. Thank you to everyone who participated!

### Lifetime Membership Recipients

**Diana Hume**

*Linda Verbek*

The Alpine Garden Club of BC would like to congratulate Diana Hume for her large and continuing contribution to our club. Diana Hume has been a member of the Club for a long time. She has served on the executive, and as such was involved with organizing open gardens. She ran our Spring Show for 3 years, which is the one time we show off to the public, and stepped down from that task to take over the Seed Distribution side of the Seed Exchange, which she ran for 9 years. Running the Spring Show is concentrated while it lasts, but the Seed Distribution is a much bigger job – although it is easier now than when Diana ran it, because some of the busy work can now be done by computer. Diana also hosted packaging sessions even before she was in charge of the whole business. She has been active with our sales and bringing items for the raffles, and is altogether a wonderful person to have in the Club.

## Club News

### Lifetime Membership Recipients

#### David Sellars

*Chris Byra*

The Alpine Garden Club of BC would like to congratulate David Sellars for his large and continuing contribution to our club. David joined the club in 1998, joined the Executive in 2008, and served as President from 2012-2014. He has also been Program Chair since 2011. During his tenure he has excelled at encouraging participation and recruiting volunteers, the engine that sustains and grows our organization. Our effective functional website was due to a great effort on David's part. He constantly encourages and assists the executive when important decisions are needed such as in the case of utilizing the Willie Dickinson bequest for a scholarship and annual keynote speaker. As an active participant in several garden organizations, including NARGS, SGRC, and the Saxifrage Society, David's networking has provided our club with excellent speakers. The effort of organizing the talks in conjunction with other clubs to defray costs is often unnoticed but critical to the success of the program. David and Wendy's assistance with plant sales, the plant show, and garden tours have been much appreciated. They have frequently entertained, housed and toured the speakers around the Lower Mainland.

In addition to his contributions to the operation and growth of the club, David has been a great resource for our members. His articles in our and other plant bulletins, his award winning plant photographs, and his presentations to our club and international, benefit us. Chaos in the rock garden has freed us from narrow, prescriptive rock garden design traditions. His knowledge about, propagation of, and collection of saxifrages is substantive. David and Wendy's garden has been an inspiration for many of us. Once again, on behalf of the Alpine Garden Club of BC, I would would like to congratulate David Sellars on becoming a lifetime member!



# Evolution of a Rock Garden

*Darwin Carr*

The Dalhousie University Bicentennial Botanical Garden is located on the Bible Hill campus of the Faculty of Agriculture (Dal-AC) about 100 km northeast of the main campus of Dalhousie University in Halifax, Nova Scotia. The campus grounds encompass 26 acres of sweeping lawns, a large collection of trees and shrubs, as well as various feature gardens that are used as a living laboratory for landscape horticulture and agricultural training of the technical and degree programs offered at the Faculty of Agriculture.

In 2018, Dalhousie University marked its 200th anniversary with a year long celebration of events to mark this important milestone. As part of this celebration the campus grounds were officially named the “Dalhousie University Bicentennial Botanical Garden”. Several feature gardens have been identified to attract visitors and to showcase the work of the garden staff as well as work projects that have been completed by Landscape Horticulture classes, past and present.

Six main feature gardens have been selected to represent the botanical garden. The Pollinator garden, Berlin Wall display, Alumni Gardens, Herb Garden, Rock Garden and the Limestone Alpine Garden. Other features of interest on the Bible Hill campus are the Heath and Heather Beds and the collection of rhododendrons and azaleas throughout the campus that have been left to our benefit from hardiness evaluation trials performed by the NS Dept. of Agriculture in the 60’s and 70’s.



Rock Garden at Dal-AC.

By far the Rock Garden at Dal-AC has been the main drawing feature since it was developed in the early 2002. This garden began as a project to replace an existing small rock garden adjacent to the horticulture building. Building upgrades caused the loss of the small existing rock garden that was used extensively for teaching and plans were developed to replace the old garden with a small new one elsewhere on campus. We were very fortunate to have access to recently retired Dr. Bernard Jackson, past director of the Memorial University Botanical Garden as our Friends of the Garden Coordinator at the Dal-AC campus at the time and he was eager to help build the new display.

With a generous donation from a local quarry, and a small budget of \$10 000 provided from the Friends of the Garden for excavation and stone placement, the project commenced in June of 2002. Earth shaping, stone trucking and placement was completed by the end of July. All this under the direction of Bernard and his mantra of “we need more rocks!” The former small rock garden of 40’ by 40’ had grown to its present size of approximately 2/3 of an acre. The main rock garden was built using approximately 800 tonnes of red granite boulders, gravel, and crusher fines to create the effect you see today.

The main body of the rock garden, with its ridges and valleys, cliffs, scree garden, and dry stream bed were completed by the end of the first year of construction. Alpine plants, ground covers, dwarf evergreens and small flowering shrubs were installed by the Friends of the Garden and the students in landscape horticulture labs.

Over the first winter, plans were made to add a main entrance and courtyard to the rock garden to allow for a gathering area for this new campus feature. An application for funding was sent into the North American Rock Garden Society’s “Norman Singer Endowment Fund” to see if we could raise some additional funds to pay for natural stone paving for the courtyard and entry. Thankfully our application was approved and we were granted enough to acquire the cut limestone pavers for the courtyard project.



Rock garden courtyard.



As the garden was starting to take shape, local rock garden enthusiasts were wanting to get evolved. With Bernard's encouragement the Nova Scotia Rock Garden Club was formed in the winter of 2003. We started with a small core group of about 8-10 members. We applied to NARGS to become the Nova Scotia chapter and were warmly welcomed. The group has become a constant source of encouragement and support for the garden's evolution ever since.

In the summer of 2003 Dr. Jackson did some politicking and was able to secure 25 large sandstone hand cut blocks from a building demolition that happened several years earlier and were being stored by a local municipality. We were able to employ a local stone mason, Heather Lawson of Raspberry Bay Stone, to carve out eight stone troughs to add to the new courtyard display being planned.

Additional plantings and a woodland walk were added by the Friends of the Garden and the Master Gardener summer school in July of 2003 to prepare for a connection between the main garden and the courtyard entrance.

September brought a flurry of activity, and with Bernard's direction the lab activities of our horticulture programs did the site preparation for the courtyard, a two-level display paved with limestone sourced in New Brunswick, two flanking crevice gardens, and island beds with troughs strategically placed for display effect. With the addition of dry-stone walls, it all came together to give this garden the look of age, and provide ample areas for alpine flora.



Dr. Bernard Jackson. The master at work!



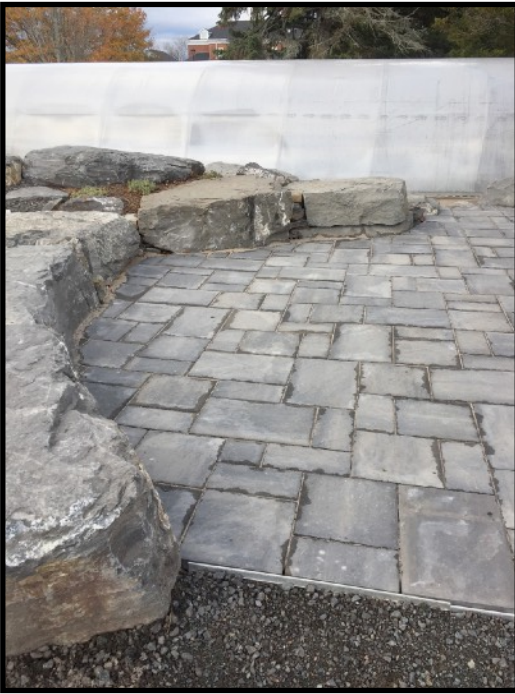
We were very fortunate to have many other students and instructors involved in the embellishment of this amazing garden. The engineering wood construction class got involved under the guidance of instructor Wayne Bhola, and throughout the winter the students in his classes constructed two cedar bridges, garden benches, garbage receptacles, and a grand shingled entrance structure. A cedar look-off deck was placed on the upper cliff area to provide a panoramic view of the main garden, with funding support provided by the Environmental Sciences student club.



Left: New structure at the courtyard entrance. Right: Bridge over a dry stream.

In 2011, a bulb garden and seed sculpture were installed in memory of one of the founding rock garden club members, and we also installed a large circular seating area to accommodate visitors in the rock garden with satellite benching, all with the horticulture students participation. A barrens garden feature was built leading up to the 10-year celebrations event in 2012 and a small peat bed was added to the woodland area to provide specialized habitat for blue poppies, orchids, fall gentians, dwarf rhodies and other choice plants.

This past year has seen an exciting new addition to the rock garden. As part of the Dalhousie University's bicentennial celebrations, the Limestone Alpine Rock Garden project was proposed as the Botanical Garden's 200th anniversary project. Once again, the Friends of the Garden were pressed into action and were enthusiastic in the fund raising and support.



Outdoor classroom.

As part of the installation of this new garden space an outdoor classroom was requested to be incorporated into the plans. This new Limestone Rock Garden would provide a different type of habitat and provide a whole new learning experience for the students in the program.

Once again, we were fortunate to have another local corporate quarry provide material support for our project. Approximately 450 tonnes of limestone rock and gravel were used in this new garden. Ground breaking commenced in the fall of 2017 to make way for the student lab involvement in fall 2018.

The new limestone garden has various features unique to our campus; an outdoor classroom, limestone ledge cliffs, large crevice beds, a limestone pavement, talus slope and scree, a pond supported by a dry stacked wall, and bio swales to control runoff entering the garden from the adjacent parking lot.

2019 will be an exciting year for putting the finishing touches on this new garden display. We are very fortunate to have Wrightman Alpines Nursery only a few hours away in St. Andrews, New Brunswick. Esther Wrightman has been a great source for choice plants and advice on how to grow a multitude of alpine gems.



New crevice beds.





This rock garden was officially dedicated to Dr. Bernard S. Jackson in the summer of 2006.

So, if you're in Nova Scotia this summer, why not stop by and see one of the best kept secrets of the rock gardening world in Bible Hill, NS? Everyone is welcome to visit the garden and explore the rest of our beautiful campus. For more information about the garden and planning your visit:

<https://www.dal.ca/about-dal/agricultural-campus/about/gardens.html>

*Darwin Carr is the Botanical Garden Coordinator for the Dalhousie University Botanical Garden at the Dalhousie University Faculty of Agriculture in Bible Hill, Nova Scotia. He holds a diploma in Landscape Horticulture from the former Nova Scotia Agricultural College (NSAC) and a degree of BTech in Landscape Horticulture from Dalhousie University Faculty of Agriculture.*

*All photos were provided by the author.*

# **Alpine Plants, Spiders, and Some Fungi of Sikanni Chief River ER and Ospika Cones ER**

*Dr Kendrick Marr*

The Royal BC Museum (RBCM) is engaged in scientific studies of the biodiversity of the province. Each year RBCM biologists collect specimens in areas from which few, if any collections have been made.

A museum specimen documents the occurrence of a particular species at a specific place and time, a permanent resource for further study. Learning more about species distributions helps to tell the story of a landscape's history. Specimens document the various attributes of known species; the habitat information that accompanies them provides insights into a species' ecology. Occasionally species that are new to science are discovered from collections made years earlier and cared for in museum collections. It is impossible to predict all of the ways specimens will be used in the future, i.e. decades ago no one knew that museum specimens would be used in genetic studies involving DNA – an invaluable tool for taxonomic and conservation research, as well as other lines of inquiry.

This article highlights some of the finds that were made at the Sikanni Chief River and Ospika Cones Ecological Reserves during a visit by RBCM staff and a Research Associate in 2015.



Ospika Cones Ecological Reserve



In 2002, in response to a widely recognized need to document the plant diversity in alpine habitats in the mountains of northern BC, RBCM botanists began to make collections from areas that had never been reached before. There are three aspects to this research: 1) document alpine plant diversity for current and future research by making comprehensive collections in remote and under-studied regions of BC; 2) investigate spatial patterns of species distribution on the landscape and identify the environmental drivers of alpine plant biodiversity in BC; and 3) uncover historical species migrations, centers of unique and high genetic diversity, and locations of glacial refugia using evidence from DNA markers of selected species. This is the most in-depth and extensive effort of its kind in BC to-date.



*Pedicularis oederi* (Oeder's lousewort)

In recent years, RBCM botanists, entomologists and arachnologists have participated in joint fieldwork and we have also collected tissue samples for a provincial mushroom specialist. Even less is known about BC's alpine insects, spiders and fungi, than is known about alpine plants. This is an ongoing research project, and we are focusing our efforts in the next few years on the mountains of southern BC.

Participants in our visit to these ecological reserves included Dr Ken Marr (Curator of Botany), Dr Richard Hebda (Curator of Botany and Earth History – now emeritus), Dr Erica Wheeler (Botany Collections Manager – now Head, Collections Care and Conservation) and Dr Robb Bennett (Entomology Research Associate – as an arachnologist). Partial funding was generously provided by the Vancouver Natural History Society. Collections had not been previously made from these locations. Because the focus of our project is on the biota of the alpine, we did not make collections below treeline.



Our travel consisted of a flight from Victoria to Prince George, an 8-hour drive along the west side of Williston Reservoir, past the community of Tsay Keh, at the north end of the reservoir, and on to an exploration camp of Canada Zinc Metals Corporation near Akie Creek, where we spent our first night.

The next day, July 23, Yellowhead helicopters flew us to the Sikanni Chief River Ecological Reserve (SRER) where we set up camp at 57° 17' 49" N x 124° 07' 55" W and made collections from the northern third of the reserve from 23-25 July. As is typical of alpine environments, the landscape consists of lush meadows and relatively barren fellfields. Mid-day on 25 July we were picked up and moved to the Ospika Cones ER and dropped off at 57° 01' 36" N x 124° 14' 02" W where we made our camp high above the 'cones' and made collections from the eastern half of the reserve.



Collecting in a lush meadow at Sikanni Chief River Ecological Reserve.



At Sikanni Chief River ER we collected 152 species of vascular plants, notable among these was *Draba densifolia* (Nuttall's draba), a blue-listed species. Other species of note included *Pedicularis oederi* (Oeder's lousewort), *Carex fuliginosa* (short-leaved sedge), and *Juncus biglumis* (two-glumed rush).

Left: *Draba densifolia* (Nuttall's draba)

These three species and at least nine others have an interesting disjunct distribution, absent from southern BC as far as we know, but present further south on the Beartooth Plateau (east of Yellowstone National Park) and the mountains of northern Colorado. There is abundant suitable alpine habitat in the intervening areas. A likely, partial explanation for this distribution pattern is that during a cold, but mostly glacier-free period of the Pleistocene, alpine tundra habitat was widespread at low elevations and species that are adapted to these conditions were able to migrate throughout the northern hemisphere.

When the climate warmed, they lost much of their previous distributions as low elevations became forested, or otherwise ecologically unsuitable. This explanation does not address the absence of these species from the alpine of southern BC however. Perhaps recent episodes of glaciation were more extensive there than in northern BC.

At Ospika Cones ER, we collected 156 species of plants, many of which also occurred at Sikanni Chief River ER. An interesting, though commonly seen phenomenon here was a 'pseudoflower', an infection by the fungus *Exobasidium cassiopes* growing on *Cassiope mertensiana* (white mountain heather). The fungus infects the growing tip of the plant, causing abnormal growth that resembles a flower and in fact this growth produces nectar. Insects are attracted to the pseudoflower and disperse the fungal spores. At both ERs we collected one of my favourite species, the tiny *Gentiana prostrata* (moss gentian) whose flowers only open in the sunlight.



Left: Pseudoflower on *Cassiope mertensiana*. Right: *Gentiana prostrata*.



Two thousand and fifteen was our first year to collect mushroom samples. We collected tissue only of species of *Amanita* for a provincial government fungus specialist. DNA sequences indicated that at least two of the species that we collected for her, have not been described before. These finds were so exciting for her that in 2016 she joined us in the field to make her own collections and has subsequently discovered that at least 48 species of fungi are present in the BC alpine (from a very limited geographic range) and at least 8 are undescribed.

As noted earlier, very little is known about spider occurrences in BC. From Sikanni Chief River ER, 19 species were collected and 29 were collected from Ospika Cones ER. Among these were *Tapinocyba prima* – a rare but widespread high latitude/altitude spider, *Pardosa podhorskii* – with only 4 records in BC including both Sikanni Chief River ER and Ospika Cones ER, and *Mecynargus paetulus* with only two records in BC, Ospika Cones ER is the most southerly.

For our own research using DNA markers to track the migration of northern hemisphere plants we collected leaf tissue of *Festuca altaica* (Altai fescue), and for a researcher at Western Washington University, who is investigating similar questions, we collected tissue of *Saxifraga tricuspidata* (spotted saxifrage).

Originally published in *The Log*, Friends of Ecological Reserves Newsletter, Autumn/Winter 2018/2019 issue.

*Dr Ken Marr has been botany curator with the Royal BC Museum since 2001. Ken is interested in the classification, phylogeography (biogeography using DNA markers), and conservation of terrestrial vascular plants, in particular the alpine flora of BC.*



Previously undescribed species of *Amanita*.

## 'Pinkie' & Friends on Gabriola Island: *Lewisia* Performance in 2018

Grahame Ware

A new place...a new year...but my *Lewisia* species and cultivars in pots and troughs performed beautifully.

Earlier, in the 90's, I'd grown 300 of *Lewisia* Birch hybrids in my north Okanagan garden from seed given to me by the propagator at the nursery of Will Ingwerson (who also happened to be the hybridizer of *L.* 'Pinkie'). Apparently, there was enough DNA of *Lewisia* 'George Henley' in this huge packet of Birch hybrids seed to produce one particularly fine selection of mine that I named Ruby Birch. It is a compact and clean rosette with lovely, smaller flowers (unlike the gaudy Sunset Group and many of the Ashwood strain) produced in dark, ruby pink profusion, and a re-bloomer to boot. I was able to sell a few at sales but never bothered to register that cultivar name.

Now, with a move to the seashore of the Georgia Strait/Salish Sea, the less extreme summer and winter weather has proved a tonic for 'Pinkie' and the rest of the *Lewisia* clan. In fact, in the case the old stalwart *Lewisia* 'Pinkie', it performed the best it ever has.



*Lewisia* on my deck: *L.* 'Pinkie' on left; top right *L.* 'Norma Jean'; bottom *L. cotyledon* f. *alba*.



## ***Lewisia* 'Pinkie'**

For those not familiar with this cultivar, let me fill you in on the wonderful *Lewisia* 'Pinkie'. I acquired a single plant from Roger Barlow in 2009, and have never divided it (Note: I will finally be dividing it this spring/summer). This hybrid arose from crossing *Lewisia longipetala* with *L. cotyledon*. In essence, the resultant offspring has the long leaves and compact rosette structure of the subalpine/alpine species *Lewisia longipetala*, combined with the flower size and temperate, maritime vigour of *L. cotyledon*.

The habitat of *Lewisia longipetala* is the key to this fine alpine with its penchant for boulders, rock fields, crevices, and screes fed by snow-melt, predominantly in subalpine forest at an elevation of between 2500-2925 m.

The Jepson eflora indicates that *Lewisia longipetala* has a chromosomes count of  $n=11$ , while most of *L. cotyledon* vary from  $n=14-15$ . Thus, any seed produced from this hybrid is usually sterile. Somehow, Ingewerson or his propagator George Henley were able to make a cross that took. Speaking of George Henley, I had that cultivar briefly but planted it in a rock garden I made for a client on Silver Star Mountain. It was a good, brick red flower, and compact too. It had arrived from England around Christmas time in a small box with the label, "Gift: woolen socks"! It's a very nice cultivar that one would be hard pressed to find these days.



*Lewisia*  
'Pinkie'



## 'Norma Jean' continues to shine

I have rhapsodized about this Rick Lupp cultivar at length in the past, so I'll keep the jawing down to a minimum and direct you to a link to a photo essay I did on it 5 years ago in the International Rock Gardener:

[http://www.srgc.org.uk/logs/logdir/2013Oct241382632259IRG46\\_October2013.pdf](http://www.srgc.org.uk/logs/logdir/2013Oct241382632259IRG46_October2013.pdf)

I laugh now when I see the images that show how much smaller it was then. This can only mean that it has done very well living in a trough made by my late alpine loving buddy, Peter (Charles) Bailey. His and Mary's article on hypertufa troughs in the the Spring 2005 Bulletin is available here:  
<http://www.agc-bc.ca/2005-bulletin>



*Lewisia* 'Norma Jean'.

I'm not sure where this can be found but I donated seed of this fine cultivar to the 2015 seed exchange, so there could be some ex 'Norma Jean' seedlings on display in the years to come.

## *Lewisia cotyledon* forma *alba*



Flower of *Lewisia cotyledon* f. *alba*.

An indicator of the good growing condition here on *Isla di Gavriola* came with the first flowering of *Lewisia cotyledon* forma *alba*. I grew this from seed obtained from the 2011 AGCBC seed exchange. It has lovely flowers that come in waves, not just a "one-off flower and its over" moment. Good double flowers and a lovely, clear white as well.

## ***Lewisia* ‘Keller’s Killer’**



*Lewisia* selection from Joe Keller.

This came from Joe Keller at the spring sale of VIRAGS in 2010 or 2011. It was his most vigorous and large-flowered dude! Yah, I know...I know, I just finished saying I didn't like gaudy cotyledons. But this wasn't gaudy. It was sooo *magnifico* that I paid him \$25 for the plant. It has done very well for me and comes quite true from seed as well. I trust the image will convey that.

### References:

Map and other info on *Lewisia longipetala*:

[http://ucjeps.berkeley.edu/eflora/eflora\\_display.php?tid=30834](http://ucjeps.berkeley.edu/eflora/eflora_display.php?tid=30834).

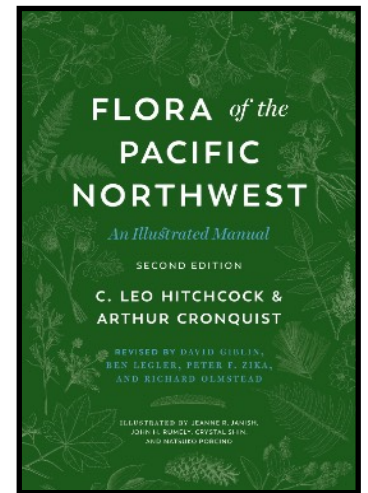
*Grahame is a Vancouver born writer/horticulturist currently living on Gabriola island's eastern shore. He is the co-author of Heucheras & Heucherellas (Timber Press 2005) with Dan Heims and also the author of numerous The Plantsman journal (RHS) features. Grahame recently spent three years in the editor's chair of the AGCBC Quarterly Bulletin. He has been sculpting/carving for many years and is opening his studio this summer. His work can be seen at [www.phantasma.ca](http://www.phantasma.ca). He loves the longevity and beauty of Lewisia as well as their ease of propagation. All photos provided by the author.*

## Book Review

Ben Stormes

### **Flora of the Pacific Northwest. An Illustrated Manual – Second Edition**

C. Leo Hitchcock and Arthur Cronquist.  
Edited by Giblin, Legler, Zika, and Olmstead  
Illustrated by Janish, Rumely, Shin, and Porcino  
2018 University of Washington Press  
Hardcover. 936 pages. 10” H x 7” W.



A little under three years ago I decided to move to Vancouver from upstate New York, a move that would take me from a predominantly interior deciduous forest environment to one dominated by coastal plant communities, temperate rainforests, and dramatic alpine environments. In anticipation of the move, even before securing housing or other base needs in Maslow’s hierarchy, I managed to get my hands on the first edition of C. Leo Hitchcock and Arthur Cronquist’s *Flora of the Pacific Northwest. An Illustrated Manual*, published in 1973 by The University of Washington Press. I spent many hours examining the authoritative reference, impressed by the thorough treatments of all vascular plants in the province, complete with informative illustrations and notes, in a single-volume resource. “What could be better?” I thought.

Apparently the only thing better is the newly revised second edition of this steadfast resource, published again by The University of Washington Press in late 2018. It delivers five years worth of amendment work carried out by a dedicated team of authors and contributors to bring the historic classic up to date with modern taxonomic and nomenclatural shifts, newly described taxa of the region, and additional non-native plants that have established themselves in the region. The second edition contains 5,545 taxa, an increase of 1,130 over the first edition.

Packed with dichotomous keys, morphological summaries at both family and genus levels, and distribution range, one gets the sense they are navigating a truly commanding text. Additionally, 93% of taxa covered are accompanied by small, yet detailed botanical illustrations. This truly is a comprehensive technical reference for the flora of Washington, the northern half of Oregon, Idaho north of the Snake River Plains, the mountainous portion of western Montana, and southern British Columbia south of about 51° North latitude.



While I sing praise, be warned: There are some challenges in using this reference if you are unfamiliar or out of practice with using authoritative floras. This work was originally designed to be a 7"x10" single volume field reference in place of the five volume *Vascular Plants of the Pacific Northwest* by Hitchcock, Cronquist, Ownbey and Thompson, and as such many abbreviations and symbols are used in place of full text to save space. Long prose is nowhere to be found, rather paucity and briefness which at times may appear coded in shorthand. While a complete reference is provided for these abbreviations and symbols, regular use of this text is likely the best way to have the content become instinctive.

Additional challenges may arise by casual users in that treatments by-and-large appear in a phylogenetic sequence that follows currently understood evolutionary relationships. As such, if one were seeking the treatments for plants in the Apiaceae family it is helpful to know that this is considered an evolutionarily 'modern' plant family, and as such appears near the end of the text. This stands in stark contrast to the ease of alphabetical organization utilized by many field guides, general reference books, and some floras. Thus, consulting the index may be required to locate specific plants or plant groups within the body of the text. Compounding confusion, the index reveals substantial nomenclatural changes in this edition, with only 58% of the taxa appearing under the same name as they were treated in the first edition. While periodically frustrating, or for some people infuriating, the adoption of new nomenclatural and taxonomic work is an important part of ensuring the second edition serves as an appropriate tool for modern botanical work and remains relevant well into the future.

Despite the possible challenges noted above, the second edition of *Flora of the Pacific Northwest* stands as an invaluable reference for serious hobbyists, students, and professionals. Floristic treatment is comprehensive but clear, and it is obvious the devoted efforts of those involved in updating and revising the original text will aid many a keen plants-person for decades to come.

*Ben Stormes is Curator and Horticulturist for the North American Gardens at the UBC Botanical Garden. Ben has worked with a number of public and private horticulture organizations, as well as completing academic pursuits in ornamental horticulture, landscape architecture and public garden leadership. Image provided by University of Washington Press.*

## International Plant Portrait

### *Jankaea heldreichii*

*Ger van den Beuken*

This unmistakable species with its dense white woolly leaves is part of the family Gesneriaceae and endemic to Mount Olympus in Greece. It prefers damp, north facing, limestone rocks, often near streams at altitudes of 200 to 2500 metres. Rosette and clump forming like *Ramonda* (some taxonomists actually consider it to be a member of this genus), the plant has two to sometimes six cm long obovate, silvery leaves. The bell shaped flowers are mainly lilac-blue, sometimes pale blue, and are held on two to four cm pedicels, though they are occasionally stemless.



*Jankaea heldreichii* is endemic to Greece.

It has always been my wish to see this protected rarity in the wild. Last June we were on Mount Olympus, but only at low altitude due to my knee problem. Unfortunately, most of the plants were not in flower but it was wonderful to see them growing in large colonies in a layer of moss on vertical rocks.

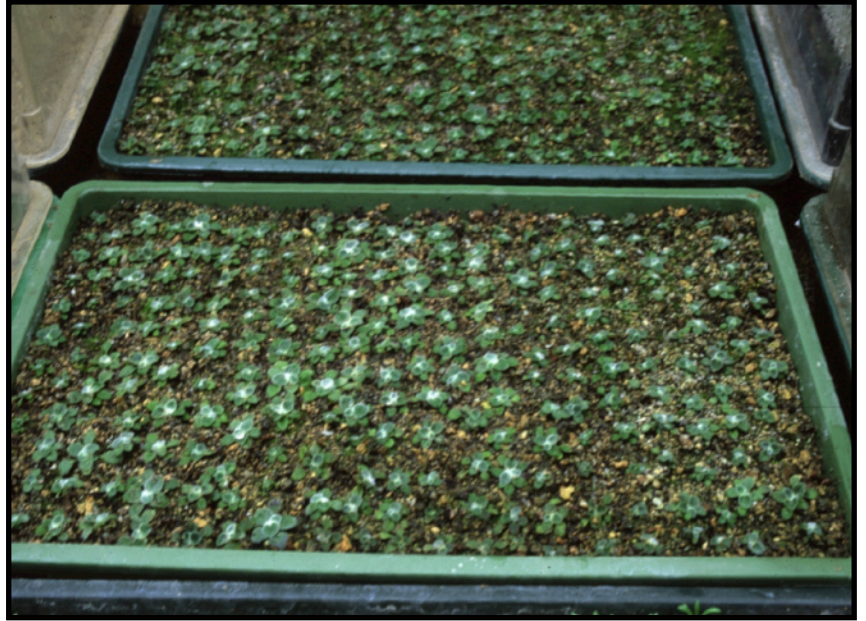
It's clear to see the difficulty in reproducing their habitat in the garden. The only way is by using good quality limestone rock, preferably tufa, and to use a drip water irrigation system to keep the rocks moist during spring and summer. The plants need to be planted in a crevice or drilled holes, always in vertical shady places. Winter protection is not necessary, as they are completely hardy. In the first years the plants are rather vigorous, but after many years, they become woody and grow out of the crevices. The blooms deteriorate as well.



*Jankaea heldreichii* growing on Mt Olympus.



That means it is time to propagate, which is extremely difficult. There are two options: from seeds or leaf cuttings. I can only give advice about growing from seed. The first problem may be finding a supplier, if your own plants do not produce seeds. Growing plants to an acceptable size is the next challenge. The seeds have to be sown on a sterilized mix, 7:3, of fine peat to sharp sand. After several weeks, when the very small seedlings appear, I mist with a sterilized low strength fertilizer. When the seedlings are big enough, I prick them out into fresh soil and keep them well protected in a tray with a lid. I repeat this work after several weeks and again give them a fertilizer mist. If necessary I repeat everything again. After about 1 year the plants are big enough for planting.



Propagation trays of seedlings.



The hybrid *Jankaeamonda vandedemii*.

If you have a chance to purchase *Jankaeamonda vandedemii* you should do so. This crossing of *Jankaea heldreichii* with *Ramonda myconi* is so beautiful, with all the best features from both species.

Good luck with the cultivation of *Jankaea heldrichii*, one of the most rare and stunning alpiners for the rock garden.

*Ger runs a small nursery specializing in rare alpiners in the Netherlands. His interest in alpiners started about 35 years ago, during his first treks in the mountains. He particularly focused on the high alpiners such as Saxifraga, Androsace, Dionysia and Daphne. Ger and his wife Mariet have traveled extensively in Europe, North and South America, China, New Zealand and Turkey to see plants in the wild.*

## Gardens Rock

David Sellars

### A Taste for Tight Buns

We all like to fondle tight buns but many dwarf cushion alpines are challenging to grow, especially in the open garden. There are wonderful species of *Androsace* and *Dionysia* that form lovely cushions but how often do you see them well-grown outside the alpine house?

Cushion plants are a magnificent adaptation to the harsh alpine environment. The dome shape is very efficient at retaining heat and maximizing the exposure of foliage to sunlight. The tight domes hug the ground and are resilient in the face of howling winds and blowing snow on exposed alpine ridges. Conditions in the open garden at sea level are quite different and problems can occur with excessive winter wet and extreme summer heat. But there is one group of cushion plants that grow well in the garden and have all the characteristics of the classic alpine bun.

In our climate, plants in the Porphyron section of Saxifrage are relatively easy to maintain and provide interest both in and out of flower. They are covered in small flowers in early spring like jeweled pincushions but they also form exquisite tight buns that can be appreciated year-round. Because they flower so beautifully, saxifrages are not often thought of as foliage plants but there are a surprising variety of foliage forms.

The cushions of Porphyron saxifrages are formed by hundreds of tightly clustered rosettes. The photos illustrating the foliage were all taken in November well before flower buds start forming. The rosettes can be very small and soft creating a slightly undulating surface. They can also be large and bristling like a desert plant. Colours include all shades of green to limey grey. My favourite is *Saxifraga* 'Antonio' which has greyish green spikey rosettes that jut out at crazy angles. Not nice to fondle at all really but sometimes personality is everything!



# Gardens ROCK!



Images clockwise, starting at top left: *Saxifraga* 'Antonio', *S.* 'Allendale Charm', *S.* 'Joy Bishop', and *S.* 'Mary Golds'.



## Editor's ID Challenge

Do you know it? This is a plant that natively resides in redwood forests, but does well enough in the shade of a big *Acer grandidentatum* in the Alpine Garden at UBC. It is the first plant to bloom in the North American section each year, though unfortunately it never does so well. I suspect slugs are to blame (they usually are...). The crooked pedicles are more often than not reaching for the sky with a stump where the flower should be. Hint (or at least fun fact): the genus of this plant translates to crooked-footed, alluding to the curved pedicels. One of my favourite traits of this plant are the leaves. I'm a sucker for their purple mottling; one of the characteristics that differentiates it from the only other plant in this genus.



If your desire is to grow a show-worthy specimen, you may want to consider growing this lily family member in a pot. This is what they do at KEW, and as jealous as I was of the specimen I saw in the Alpine House last year, they seemed equally envious that I am able to leave mine out in the elements.

A final hint: If images could convey scent, you may consider it malodorous, a characteristic represented in its common name.



*Scoliopus bigelovii* also known as fetid adder's-tongue.