

Alpine Garden Club  
of British Columbia



*Galanthus elwesii* "Rosemary Burnham"

*Photo: Paddy Wales, courtesy UBC Botanical Garden website*

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Web Address: [www.agc-bc.ca](http://www.agc-bc.ca)

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**Meetings are held the second Wednesday of each month except July & August, in the Floral Hall, VanDusen Botanical Garden. Doors and Library open at 7:00pm and Meetings start at 7:30pm sharp with the educational talk. Don't forget to bring a prize for the raffle which goes a long way to paying for the hall rental.**

**Cover:** This photograph of *Galanthus elwesii* "Rosemary Burnham" was taken by Paddy Wales of Roberts Creek, BC and was featured as a Botany Photo of the Day on the website of the University of BC Botanical Garden, March 24<sup>th</sup> 2007. We are proud that AGCBC member Rosemary Burnham, a dedicated plantswoman and artist, was the first to discover this variety; see Pam Frosts article on p20.

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### REGISTER ON-LINE !

Last-minute, on-line registration for the **Western Winter Study Weekend** is available from our website: [www.agc-bc.ca](http://www.agc-bc.ca) Also see **the back cover of this Bulletin for details.**

The forms are clear and very easy to use. Our registration site is secure so that you can give your details and credit card information in confidence. You will receive an email response to confirm that your registration is accepted, and your credit card details are automatically deleted from our records as soon as the transaction is completed. We guarantee that your details will never be shared with any other organization for any reason.



### THE WESTERN WINTER STUDY WEEKEND 2008: *"Plant Treasures for the New Millennium"*

These study weekends are highlights of the horticultural season. With an exciting lineup of speakers and the enthusiasm and knowledge that attendees bring to the program there are few better gardening events. Conferences of this nature cannot be successful without relying on our membership to volunteer time to the many tasks required; your help is needed so please call Philip MacDougall if you can spare even just an hour - 604-580 3219. And remember, there will be shopping!

*(For full details of the Hotel, Speakers and Events see pp23-24.*

## SEED EXCHANGE REMARKS:

The Canadian and overseas seeds were posted on January 7<sup>th</sup> and the US, due to the paperwork required, on January 10<sup>th</sup>. By the time this Bulletin arrives you should all have your seeds and perhaps have planted them. May all your seeds come true.

I must recognize some donors whose seed donations arrived too late for inclusion on the list, some due to delay in Customs: B. Gustavsson, P. Lotze, Otago (NZ) Alpine Garden Group and G. Ware. Apologies to B. & K. Hutchings, F. Kummert and M. Stevenson whose names I misspelled on the list.

There were a number of seeds which were in very short supply, and as is always the case, these are among the most requested. Phlox seeds, due to the difficulty in collecting them, are usually small in quantity. Requests for the *Shortia exappendiculata*, collected by one of our members in Taiwan, greatly exceeded the supply. For some reason, perhaps due to growing conditions this year, the numbers of seeds of many of the *Cyclamen* were very few. Our apologies to those of connoisseur taste, who requested but did not receive, some of these.

I will crunch some of the numbers when time permits but an impression is that there was some decrease in the number of wild collected seeds this year; probably part of a very unfortunate trend. We are particularly grateful to those who venture into the fields and mountains to do wild collecting. May your tribe increase. We are grateful to all who send seeds to our exchange and to the dedicated group here who volunteer their time and energy to make the exchange possible.

I will follow up on my remarks, made earlier, about ephemeral seeds. There have been a few, very few, replies to the question about germination of *Trillium* and other ephemerals from our exchange, We would appreciate more feedback and will provide that information as well as observations and recommendations for their handling and storage in the next Bulletin.



## MEMBERSHIP RENEWALS & NOTES

A reminder that membership subscriptions for 2008 are due. The date of expiry of your subscription should appear on the mailing label for this Bulletin (really!). A convenient new option is to renew using our secure website to pay by credit card. (The website is most simply found under Alpine Garden Club on your search engine of choice).

Also available on the website is the Bulletin in full colour, something it's too extravagant to afford in the printed version. (While checking that, take a look too at our new gallery of alpine plants.) The Bulletin only appears on the web about a month after copies are mailed to members. However, we could save considerable postage costs if enough members agreed to accept the Bulletin by electronic means. **Important note:** We do need to know if you **do or do not wish to receive the Bulletin by e-mail**. Please respond to this question.

We hope you'll enjoy another interesting and successful year of growing and learning with the Alpine Garden Club of B.C.

## PROGRAM:



**Feb 13th**      **Members' slides**  
**March 12th**    **David Sellars:** *King Laurin's Garden: Following the footsteps of Reginald Farrer in the Dolomites.*

**April 9th**      **Harry Jans** Thanks to the NARGS Speakers Tour.  
Website: [www.jansalpines.com](http://www.jansalpines.com) . A rock gardener for more than 25 years, specializing in rare and unusual alpines. Founding member of the Dutch Rock Garden Society and president of the Society for 6 years. Member of four AGS Expeditions, Frequent lecturer at International Conferences and Study Weekends in Holland, Germany, England, Scotland, USA and Canada. He has written several articles for international journals on the subjects of rock gardening and alpine plants.

Members Choice of Possible Topics: **Construction: Growing Alpines in the "hills" of Holland; The Cream of the European Alps; The best of the North-West Yunnan Alpines; A closer look at the rich Alpine Flora in Sichuan province; Plant hunting on the Roof of the World; Iran in focus; High Alpines on the Equator.**

**April 12<sup>th</sup> – 13<sup>th</sup>** The Annual Alpine Garden Club of BC Spring Show will be held in the Floral Hall at VanDusen Garden, 37<sup>th</sup> and Oak Street, Vancouver. Hours of opening are Saturday, 12 noon to 4 pm and Sunday, 10am to 4 pm. Plants may be entered for the Show between 6 and 9 pm on Friday the 11<sup>th</sup>. The BC Primula Group will hold a sale on the walkway from 10am on the 12<sup>th</sup>.

**May 14th**      **Linda Jennings:** Collections Manager of the UBC Herbarium: *A History of Women in Botany on the West Coast.*

**June 11th**      Possible tour of UBC [E.H. Lohbrunner Alpine Garden](#) led by **Brent Hine**, Curator of Collections.

**Sept 10th**      Brent Hine – *Dry Land Odyssey (to be confirmed)*

**October 8th**    **Linda Veerbeek:** *Alpines along the West Coast*

The 2009 NARGS speakers tour features **Joseph Halda**. He will be speaking to our group **Sunday March 15th, 2009**. Please note this is not our regular date and the venue may change. We may also hold our regular meeting on Wednesday March 11th.



## AGCBC-NARGS AFFILIATION PROPOSAL

~ by **Charlie Sale**

Many of you know that I am a member of the Board of Directors of The North American Rock Garden Society (NARGS) and that I sit on the Administrative Committee. I have been a NARGS member for over 20 years and a member of a Canadian chapter during that time. I believe that there are compelling reasons for the Alpine Garden Club of British Columbia to affiliate with NARGS.

**FIRST – WHAT IS NARGS?** The Society was formed to encourage alpine & rock gardening in North America by assisting both interested individuals and local organizations.

**Structure:** NARGS is a **federation** of local alpine & rock garden societies located in Canada and the United States. Each of these local organizations is a chapter of NARGS. Each establishes and collects membership dues from its members for the **exclusive** financing of its own operations.

**Governance:** NARGS is governed by a **Board of Directors**. It is comprised of directors elected at its annual convention, plus an officer from each of its chapters, plus the immediate past president, and the elected officers - the President, Vice-President, Recording Secretary, and Treasurer. The affairs of the Society are administered by an **Administrative Committee** consisting of the President, Vice-President, Recording Secretary, Treasurer, and also one Director selected from the Elected Directors by the Officers. The Administrative Committee implements the policies of the Society. With the approval of the Board of Directors it appoints the Editor of the Rock Garden Quarterly, Director of the Seed Exchange, Book Service Manager, Archivist, Executive Secretary, Slide Librarian, and Advertising Manager.

**Currently there are 3 elected Canadian Directors; one also serves on the Administrative Committee.**

**Membership & Dues:** Chapter members are encouraged, **but not obliged**, to become members of NARGS. NARGS is financed primarily by the dues received from its members. These dues are collected independently by NARGS and not by the local chapters on behalf of NARGS. NARGS dues are currently about Can.\$30.00 annually. NARGS by-laws require that the Chapter President and Secretary be members of NARGS. ***I recommend that the Club offer to pay the NARGS membership of these two in the event of affiliation should they not already be members.***

## **SECOND – HOW DOES NARGS SUPPORT ITS CHAPTERS?**

**Study Weekend Financial Loss Protection:** As a matter of policy **NARGS guarantees to reimburse** any chapter hosting a Winter Study Weekend **for any net loss incurred**. The hosting chapter's only obligation is to provide in advance a budget for the event for approval.

In 2007 both the Eastern & Western Study Weekends incurred substantial losses that were covered by NARGS – a total of over \$39,000. Although this was an extraordinary occurrence, it served to illustrate that the unexpected can happen. Although we are blessed with a very desirable conference location, we are vulnerable to unfavourable currency exchange rates and border crossing delays for Americans, as well as the general inconvenience of flying today.

**Speakers Tour Program:** Since 1993 NARGS has brought internationally known speakers to local chapters. NARGS plans the tours and pays all travel expenses. The local chapter pays the speaker's honorarium and hosts the speaker during the visit. Maria Galletti of the Quebec Chapter is the current Committee Chair.

**Although the AGCBC have from time to time been able to tie into a NARGS speakers tour, we were responsible for a portion of the travel costs.**

**Endowment Fund:** The Endowment Fund is a resource in support of special, one-time projects that advance the art and science of rock gardening. **We in the Lower Mainland have benefited as a result of grants to the UBC Botanical Garden Alpine Garden. There have been many others across Canada.**

**Subsidy for First Time Conference Attendance:** NARGS policy is to provide annually one member of each Chapter who has never attended either a Winter Study Weekend or the NARGS Annual Meeting (other than one hosted by the Chapter) with a \$300 stipend to help defray travel costs.

**Web Site:** NARGS chapters and contacts are listed on their web site. This site is expanding and improving, is often visited, and provides great links to related sites.

**North American Recognition Awards:** NARGS has six possible annual awards given to individuals in recognition of their contribution to rock gardening.

**Last year all NARGS National Awards made went to Canadians. These were: The Marcel Le Piniec Award for nurserymen: Roger & Debbie Barlow of BC; Edgar T. Wherry Award to Marilyn S. Light of Ottawa for her work on terrestrial Orchids; Award of Merit to Bernard S. Jackson of Truro, Nova Scotia for his remarkable efforts in raising rock gardening interest in Newfoundland & Nova Scotia.**

### **THIRD: SOME COMMENTS**

**In the past questions have been raised about the status and viability of our SEED EXCHANGE in the event of affiliation.**

Although NARGS operates a comprehensive seed exchange several chapters have their own seed exchanges. The Ontario Rock Garden Society, the largest chapter within NARGS, has had a successful one for years. In a recent communication **President Dick Bartlett** wrote: **"Many people in NARGS believe the AGCBC seed exchange is excellent, and we would not want to disrupt it in any way."** There is recognition that strong chapters make for a strong organization.

**Financial Strength:** For those with concerns about the financial health of NARGS, it is a soundly financed organization. It has assets of close to \$500,000, including about \$150,000 in its Endowment Funds. At a time when many horticultural organizations are struggling, NARGS is in good shape financially.

**IN CONCLUSION:** NARGS has chapters in Newfoundland, Nova Scotia, Quebec, 2 in Ontario, and Alberta. Dick Bartlett, President of NARGS, is very supportive of us adding to this strength. *He writes "... in considering the matter of joining with NARGS, from my perspective of President of the North American Rock Garden Society, the greatest advantage is to all of the Canadian chapters. With the addition of*

another Canadian seat on the Board of Directors, joining the six existing chapters, this then increases the Canadian influence. It also further creates the possibility of more Canadian NARGS officers, including a potential Canadian President." I believe the time has come to consider seriously affiliation with NARGS. ~ **Charlie Sale**



## **CONTINUING INDEPENDENCE FOR OUR CLUB**

*~ by Pam Frost*

I have been asked to respond to the above Proposal on behalf of some members with a different point of view.

First, I should clear up a misconception that exists for some Alpine Garden Club members that, should we become a chapter of NARGS, everyone would automatically have NARGS membership and access to their Seed Exchange. This is not so. As is already the case, anyone may apply to join NARGS at a cost of US \$30.00 per year plus \$15.00 to participate in their seed exchange.

The Alpine Garden Club has had a proud history for over 50 years. We are unusual, if not unique, in being a local Club with a very large out-of area membership, due primarily to our Seed Exchange. We have managed our affairs well, we have a beautiful website and we don't really need additional exposure. We also have a small legacy on which to draw, should we have a project we wish to pursue.

Our Club does have a somewhat loosely defined legal structure. We have not yet sought professional, paid advice but, were we to vote to become a chapter of NARGS, it might be necessary to incorporate the Club as a registered society, which then might create problems with tax, etc. It is of course philosophically impossible for a Club to be totally independent and at the same time part of a larger entity. In the recent past NARGS appears to have had very much a hands-off policy with its chapters, but that has not always been so.

Considering some of the points made in the Proposal: each chapter of NARGS is required to send a delegate or delegates to the annual meeting, and that is presumably a cost to be met by each chapter. Our past Study Weekends have never shown a loss. Although this is no guarantee for the future, it does not seem a very compelling reason to become a chapter. The three chapters which were consulted reported that, having sought underwriting from the parent body, they were expected to remit 25 – 50% of any profit from the Study Weekend. There also appears to be an undertaking to host and accommodate Directors who attend the Weekend.

Speakers' tour: we have been very fortunate to have been included in such west coast tours in the past, but the transportation costs have been minimal, usually from Seattle.

Subsidy for first time conference attendance is only open to applicants who are members of NARGS and is not given to every

chapter every year (in 2007 there were 13 stipends given among 36 chapters).

Our Seed Exchange is very dear to my heart as our members know and I hope it will continue to thrive, no matter what. It is a concern, however, that were we a chapter, prospective members, (particularly those overseas) might view our Seed Exchange as just an extension of that of NARGS. After all, a former President of the then ARGS did once famously offer to look after all the seeds donated to us, then give us those which remained after their Exchange was over!

None of the reasons given in the Proposal seem to me powerful enough to consider becoming a small part of a large organization. It is understandable that the North American Rock Garden Society would be happy to include The Alpine Garden Club of BC, with our close to 400 members in over 20 countries, as a chapter of its organization, but for me our autonomy is paramount. We don't know what the future may bring, but why make it more uncertain? In the words of one of our senior members, "If it's not broken, why fix it?" ~ **Pam Frost**



## TO SEE A WORLD IN A GRAIN OF SAND

~ by **David Sellars**

Building a rock garden is a statement of belief, primarily that you have the recipe for the rock garden soil just right. If the mix is not suitable you may not know for some time and there is not much you can do about it because starting again from scratch would be an enormous effort. However, if you build a rock garden in stages over a long time you have the opportunity to modify the recipe for the soil mix as you proceed.

I started building our rock garden with a mix of crusher fines and compost. Saxifrages liked it well enough, but Androsaces did not (with the exception of *Androsace lanuginosa* and *Androsace studiosorum*) and *Dianthus alpinus* choked even just looking at it. I decided it had too many fines and for the next stage I changed to a mixture of washed sand, pea gravel and compost but found preparing the mix was time-consuming. Some plants, such as *Penstemon rupicola* and *Dianthus alpinus*, were still not happy.

To reduce the amount of labour, I hunted for a source of coarse material with a wide range of particle size to avoid having to mix in the small stones. I settled on "Sechelt Sand", which is a natural pit-run material (not processed) from the Sunshine Coast. I mixed Sechelt Sand and used greenhouse growing medium (Sunshine #1 Mix which is mostly peat, adjusted for pH) with compost mixed in only at depth, at least 0.5 m below the surface. This worked much better for most alpinines and in our high rainfall climate, I found that many alpinines prefer

the mix to be about 90% sand which is, happily, easy to prepare. *Dianthus alpinus* is now so content it grows into large cushions. I increased the percentage of greenhouse medium for plants that would like a little more organic material and, at the other extreme, developed a totally pure sand bed for *Androsaces*.

When I compared the results of a mix with natural sand with a washed sand mix such as builder's sand, plants growing in natural sand seemed much happier. Plants appear to prefer the natural sand even though most references on preparing a rock garden mix recommend using washed sand.



*Collomia debilis* var. *larsenii* in the Olympic Mts.  
Photo: David Sellars

As noted by Christian Kerner in his seminal work, *Alpine Plant Life, Functional Ecology of High Mountain Ecosystems*, alpine soil profiles, counter to expectations, often contain large fractions of very fine grain sizes right down to fine clay material. This type of soil, while being well-

drained also becomes quite compact over time and few alpinines in nature grow in loose sand beds. When you walk across a fellfield or climb over a moraine, the soil is mostly compact under foot. On really loose scree slopes, plants such as *Collomia debilis* var. *larsenii* seem to be magically growing in loose stones. However this is a brilliant illusion. *Collomia debilis* var. *larsenii* has long flexible stems that grow up through the scree from a deep taproot embedded in fine-grained soil at the base of the scree. The flowers and foliage appear at the end of the stems above the loose stones. The scree flows around the plant and provides a coarse mulch but the plant is not really 'growing in scree' at all. It's growing in soil at the base of the scree.

A point emphasized in *Alpine Plant Ecology* by John Good and David Millward is that one purpose of soil is to anchor the plants. Alpine plants need to be well-anchored in nature otherwise they would be uprooted in strong winds, avalanches and movement of scree. Plants growing in rock cracks and crevices are certainly well-anchored. The roots of alpinines on compact fellfields find cracks which open up in freeze-thaw conditions or crevices between stones and the finer matrix. So it may well be that plants are happier with natural sand in the rock garden because, with a broader particle size gradation, the sand matrix compacts more than washed sand and provides better anchoring for the roots. Because alpine plants have evolved to be well-anchored, it is possible that they prefer more compact soil conditions

than loose sand. Natural sand provides stable root contact and better moisture retention while still maintaining good drainage. The fine particles also probably supply some mineral nutrients.



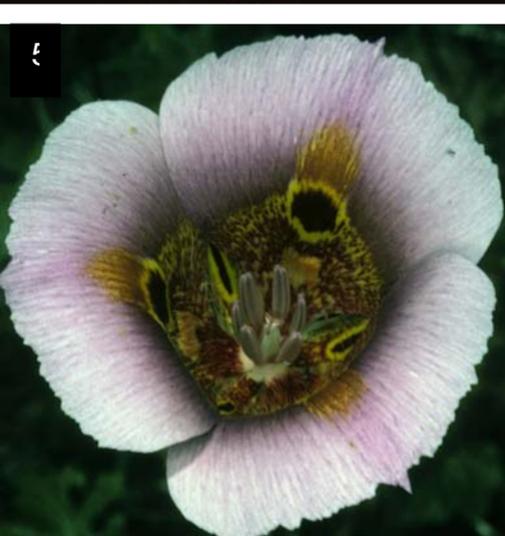
*Lewisia cotyledon*  
~ Photo David Sellars

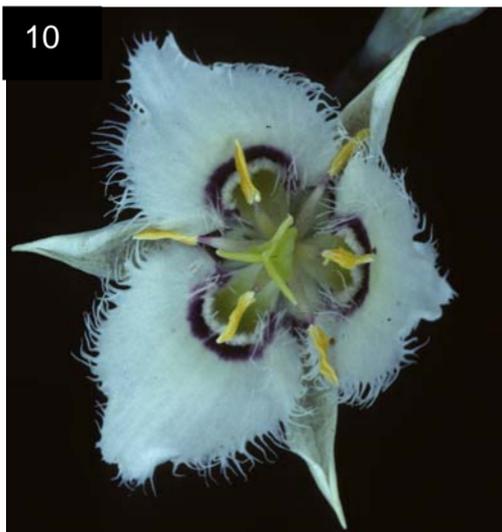
*Lewisia cotyledon* is an interesting example of a plant with thick roots that like to be firmly anchored. The plant will tolerate being root-bound in a small pot for years and is virtually indestructible in that condition. However, if you plant *Lewisia cotyledon* out in a vertical crevice which is recommended for good drainage, some plants will expire in a few seasons. I suspect that they do not tolerate soil movement around their roots, which frequently occurs in rock gardens constructed with a coarse sand mix. The soil in vertical crevices needs to be really well-compacted before planting and even then there is likely to be soil movement over time.

A coarse sand mix works for rock gardens in coastal British Columbia not because it replicates

natural soil conditions in alpine areas but to compensate for the wetter climatic conditions. A mix of coarse sand and greenhouse growing medium also has less chance of containing harmful soil fungi that are present in our gardens but not in the high mountains. Using naturally occurring, rather than washed sand provides a wider grain size distribution, which maintains superior moisture retention in the summer, more mineral nutrients and better root stability. Get your grains of sand right and a whole new world awaits.

*“To see a world in a Grain of Sand,  
And a Heaven in a Wild Flower,  
Hold Infinity in the palm of your hand,  
And eternity in an hour.” ~ William Blake*





*Calochortus* species identified on p. 15



**CALOCHORTUS: MARIPOSA LILIES AND THEIR RELATIVES**  
~ *Book Review by Pat and Paige Woodward,*  
*Pacific Rim Nursery, Chilliwack, BC*

Author: Mary E. Gerritsen Photos: Ron Parsons  
Timber Press, Portland, OR, 2007. ISBN-13: 978-0-88192-844-0

In the flowers of *Calochortus*, the typical lily structure of three petals, three sepals spins out color and form in kaleidoscopic, jaw-dropping variation. The photographs from the book that accompany this review only hint at the glories of this genus of western North American bulbs.

All 73 accepted *Calochortus* species are described and illustrated in this book. Ron Parsons' photographs alone would make it worth buying. So would the propagation advice gleaned from pioneering adepts like Hugh McDonald and the late Stan Farwig, Vic Girard and Jim Robinett. But that's just the last section of Mary Gerritsen's text. First we are treated to taxonomy both old (based on traits visible to the naked eye) and new (based on molecular analysis). They often differ! Then comes a history of the genus, with lively thumbnail biographies of the botanists who've tackled it. And then come the species one by one, divided for the sake of convenience into the "old" sections *Calochortus* (including the fairy lanterns and cat's ears), *Mariposa* (the butterfly lilies) and *Cyclobothra* (very like *Mariposa*, except when they're like fairy lanterns; mostly from Mexico and with hairy bulbs). Happily, the photographs are with their plants rather than "ganged" in the centre of the book.

Once you have overcome the lure of turning page after surprising page, the question arises: How could so much variation have happened in a relatively short time, in the relatively small range where *Calochortus* is native? Interwoven with species descriptions, the text suggests that the complex, reticulated geology of the California-Oregon heartland of the genus provides barriers to nearly all hybridization and spread. This is a landscape constructed of terranes accreted against the continent to form isolated valleys between mountain ranges furnished with substrates from seashore to serpentine. From variation, variation.

As for the genus itself: *Calochortus* is thought to have arisen in western North America perhaps 7 million years ago, long after its distant, lily ancestors had spread to this continent from Asia. Despite its bulb and bowl-like flower, molecular studies suggest that its closest relatives are rhizomatous: *Tricyrtis* — the toad lily of Eastern Asia — and *Scoliopus*, *Streptopus* and *Prosartes* — the adder's tongue, twisted-stalk and fairy-bells of North America. It turns out that the form of the underground storage organ in liliaceous taxa is not fixed but plastic, and can evolve from rhizome to bulb and back again in

response to pressures like shade, soil and drought. We see the same thing in bulbous and rhizomatous *Iris*. Flower form is similarly changeable in response to light, temperature, pollinators and so on. The evolution of similar traits, in organisms that are not closely related, in response to their environment is called convergence. For more on these riveting ideas, you will find the original scientific publications by Tom Patterson and Tom Givnish at [www.botany.wisc.edu/givnish](http://www.botany.wisc.edu/givnish).

**Calochortus species in BC:** BC is the northern limit of *Calochortus*; just three species grow wild here: *macrocarpus*, *apiculatus* and the Red-listed *lyallii*. All are in the Interior, where snow-melt launches a brief spring and summers are dry. These beauties flee from gardens on the rainy side of the Cascades, but occasionally consent to live in pots, in glass houses, when the moon is blue.

**Where to get seeds:** Only a handful of *Calochortus* species are commercially propagated. For wild seeds, two collectors stand out:

- Ron Ratko of Northwest Native Seed (915 Davis Pl. S., Seattle, WA 98144, USA; [oreonana@zipcon.com](mailto:oreonana@zipcon.com); no website).
- Sally Walker of Southwestern Native Seeds (PO Box 50503, Tucson, AZ 85703, USA; no email address; [www.southwesternnativeseeds.com](http://www.southwesternnativeseeds.com)).

Save these addresses, because one of the few flaws of the book is that the Sources list is already out of date. ~ **Paige & Pat Woodward**

Please refer to the photos on Pages 12 and 13. All photos courtesy of Ron Parsons: [flowershots@hotmail.com](mailto:flowershots@hotmail.com)

1. *Calochortus venustus*, Mt. Pinos, Kern County, California
2. *C. venustus*, Amador County, California
3. *C. venustus*, Mt. Pinos, Kern County, California
4. *C. venustus*, (most common form) Tuolumne County California
5. *C. venustus*, (unusual form) San Benito County California
6. *C. apiculatus*, Bonner County, Idaho
  
7. *C. tiburonensis*, Ring Mtn. Marin County, California
8. *C. albus*, Edgewood County Park, San Mateo County, California
9. *C. macrocarpus* var. *macrocarpus*, Modoc County, California
10. *C. lyalli*, Okanogan County, Washington
11. *C. venustus*, (yellow form) Fresno County, California
12. *C. venustus*, (wine red form) Fresno County, California



**Photo: Daniel Mosquin, [UBC Botanical Garden](#)**

*Cirsium peckii*, or Steens Mountain thistle, can only be found on Steens Mountain or the nearby Pueblo Mountains of Oregon. [Cirsium clokeyi](#), on [Botany Photo of the Day](#) (UBC Botanical Garden website) nearly two months ago, is endemic to the Spring Mountains of Nevada. When a pattern like this becomes noticeable, it is certain to catch the attention of botanists – and it has. [Dr. Dean Kelch](#) of the [Baldwin Lab](#) at the University of California, Berkeley, has investigated these narrowly-distributed endemics within *Cirsium*. Despite having low genetic diversity (by measure of rDNA), the *Cirsium* display an unusual amount of ecological diversity. The conclusions? *Cirsium* in North America have either undergone a rapid ecological radiation (meaning new species have evolved quickly to fill ecological niches) or the rDNA of thistles is highly conserved across species (meaning that as species of thistles evolve, this particular type of DNA does not change as much as it would typically be expected to do given the patterns in other plant groups). See: Kelch, DG and Baldwin, B. 2003. [Phylogeny and ecological radiation of New World thistles \(Cirsium, Cardueae - Compositae\) based on ITS and ETS rDNA sequence data](#). *Molecular Ecology*. 12: 141-151.



## STEENS MOUNTAIN

~ by Daniel Mosquin, [UBC Botanical Garden](#)

There is no shortage of unique places in western North America. I've been fortunate in the past few years to visit many special areas: Death Valley, Botanical Beach, the Chiricahua Mountains, Point Lobos, Mt. Kobau and the Oregon Coast, to name but a few. Although I plan to return to all of these sites, none beckon me to revisit their beauty more than Steens Mountain.

I don't often describe a place in comparison to another place, but I make an exception for Steens Mountain; combine the alpine areas of Mt. Garibaldi (minus the high-altitude conifers) with the dryland feel of the hills surrounding Merritt, then pepper in scenic gorge vistas that begin to approach the Grand Canyon for depth, and you have a recipe that begins to describe Steens Mountain.

Thanks to the support of the Alpine Garden Club, Brent Hine and I visited this marvelous place for two days this past July as part of the

two-week Intermountain Expedition. The main purpose of the expedition was to collect seeds for the Intermountain Dry Habitat and the Alpine Garden Club. For species with abundant seeds, some may also be distributed via UBC Botanical Garden's Index Seminum. The expedition was also valuable to scout areas for return visits and to increase experience with collecting trips.

Steens Mountain is located within Harney County of southeastern Oregon. It is a fault-block mountain, whose origin dates back ten million years when a giant fracture occurred in the Earth's crust, lifting the eighty-kilometer long ridge of rock upwards along its east side. From the summit of Steens Mountain, one can peer (cautiously) downwards over a near-vertical mile on its east flank. However, it is a long, gentle incline to reach the summit from the west, easily achieved in a standard passenger vehicle.

To the east, Steens Mountain overlooks the Alvord Basin, a desert environment that lies within two rain-shadows: the Cascade Range that causes much of the dryness in eastern Oregon, followed by Steens Mountain that captures whatever moisture remains in the air. The western side of Steens Mountain drains northwest into Malheur Marsh, a large component of the Malheur National Wildlife Refuge (claimed by Roger Tory Peterson to be one of the top ten birding sites in the United States). To the south and west is the open expanse of the Great Basin, interrupted occasionally by small mountain ranges and buttes. North of Steens Mountain, open skies can be found over Malheur and Harney Lakes, the Diamond Craters, marshes, and dry ranch land.

Administratively, Steens Mountain is a blend of public and private land. In the final weeks of his presidency, US President Bill Clinton signed into law the Steens Mountain BLM Cooperative Management and Protection Area. This law protects 170 000 acres (688 km<sup>2</sup>) as wilderness, designates 100 000 acres (404 km<sup>2</sup>) as cattle-free and prohibits mining in 1.2 million acres (4900 km<sup>2</sup>). Of course, not everyone is pleased with the designation. If you plan to visit the area, do respect the private property signs.

Floristically, if one includes the Alvord Basin, Malheur Marsh, and the Diamond Craters, the Steens Mountain area contains over eleven hundred taxa, representing approximately 25% of Oregon's vascular plants in a block of land measuring 130km by 65km (80 miles by 40 miles) or approximately 3.2% of Oregon's area. Diverse? Yes, absolutely.

It is no surprise that geological and landform diversity is often a good indicator of botanical diversity, but land diversity isn't the only factor of importance. Recent geological history causing advances and retreats of floristic components associated with surrounding areas can also increase diversity, and this is the case on Steens Mountain. Like much of North America, Steens Mountain was subject to alternating periods of cool, wet climates associated with glacial advance and warm, dry climates accompanying glacial retreat. During the times of

glacial advance, species migrated into the region from the north. The opposite also occurred. As you might expect, the present-day flora of the Steens Mountain area is dominated by elements of the northern Intermountain region, but it also contains elements of the Columbia Plateau flora, the Rocky Mountain flora and the Sierra Nevada flora.

The vegetation is divided into five zones based on elevation. Under 1300m (4250 ft.), you can expect to find either the halophytic shadscale (*Atriplex confertifolia*) desert scrub or *Scirpus acutus* and *Typha latifolia* marsh, depending on drainage patterns. Brent and I did not spend much time in this zone, other than a few ventures into riparian areas.

From 1300m to 1650m (4250 ft. to 5400 ft.), the sagebrush zone of *Artemisia tridentata* subsp. *vaseyana* and *Artemisia arbuscula* that echoes the great sagebrush steppes of western North America can be found. By this time in the trip, we'd had our fill of searching through sagebrush for interesting plants, particularly because of the accompanying sock-spearing *Bromus tectorum*, but we still managed a stop or two in this zone. Riparian areas dominated by *Salix* spp. can also be found at this elevation.

Above 1650m to 2000m (5400ft. to 6600ft.) is the juniper zone, named after the omnipresent *Juniperus occidentalis*. This was the zone of most of our success for collecting on Steens Mountain, as a number of plants had gone to seed by early July, including several *Castilleja* species. It is worth noting that due to fire suppression, the *Juniperus occidentalis* of this zone is slowly migrating down in elevation to the sagebrush zone, much to the annoyance of ranchers. Localized burning of junipers has been adopted in the area as a management strategy.

From 2000m to 2400m (6600 ft. to 7900ft.), the subalpine zone is intriguing for its lack of conifers. Instead, this zone is associated with aspens (*Populus tremuloides*), sagebrush and grasses (*Carex* spp., *Poa* spp. and *Elymus elymoides* subsp. *californicus*). The absence of conifers in the subalpine occurs elsewhere in other northern Great Basin mountains, but the reason is not yet understood. For Steens Mountain, some suggest that it may have to do with its isolation; another scholar offered that Native American use of fire had eradicated the conifers. I'm not able to offer an educated guess, but considering that elements of the Rocky Mountain flora occur here as well as the southern limit of a few boreal species (e.g., bog wintergreen or *Pyrola asarifolia*), I don't think isolation is the answer. At this elevation, roughly twenty-five inches of rain (63cm) falls every year, compared with six to ten inches (15 to 25cm) in the lower zones.

Above 2400m to the peak of Steens Mountain at 2950m (9700 ft.) is considered the alpine bunchgrass or tundra zone. This is a prime area for a return visit for seed collection. Early July was a suitable time to visit to view the plants in flower, but in terms of collecting seed, it was a near-bust. Other than one species of clover, *Trifolium longipes*, we could not find anything else with suitable numbers of seed to make a

collection. Alpine wet meadows are somewhat common, containing typical moist soil friendly genera such as *Potentilla*, *Veronica*, *Carex*, *Ranunculus*, *Pedicularis* and *Juncus*. Rare finds in these sites would include *Botrychium* species, *Allium madidum*, and the only known Oregon occurrences of *Gentiana prostrata* and *Gentianella tenella*. Dry, gravelly ridges of the alpine characteristically include species such as *Erigeron compositus*, *Eriogonum umbellatum* var. *dichrocephalum*, *Astragalus whitneyi*, and *Geum triflorum*. Of more interest, perhaps, to alpine aficionados, is the fact that these high-altitude ridges contain the six known endemic taxa to the Steens and surrounding ranges: *Castilleja pilosa* var. *steenensis*, *Cirsium peckii*, *Agastache cusickii*, *Draba cusickii* var. *cusickii*, *Poa chambersii* and *Penstemon davidsonii* var. *praeteritus*. All of these are considered to be neoendemics, i.e., they evolved in the area due to divergent adaptations to local conditions.

Unfortunately, with only one full day in the field, we were not able to explore to our heart's content. We arrived in the early afternoon on the first day and made an exploratory trip to the summit with stops at a few areas along the way for photographs. The next day was a full day of collecting as we slowly made our ascent to the summit, stopping every so often to scout and, if successful, collect. I returned to the summit in the early morning of the following day for near-sunrise photographs, before it was time to head northwest to our next destination, Prineville.

I personally plan to return to the area, perhaps even next year, as I find it photographically inspiring and intriguing both botanically and geologically. The nearby Frenchglen Hotel is comfortable and convenient. In addition to communal breakfast and supper meals, they will also pack a picnic lunch for you.

Two excellent references are nearly essential if you are planning to visit Steens Mountain. A broad overview of eastern Oregon with an emphasis on natural history can be found in the 2007 Timber Press publication, "Oregon's Dry Side: Exploring East of the Cascade Crest" (ISBN: 978-0-88192-829-7). Written by Alan D. St. John, an Oregon naturalist and photographer, my copy is already well-worn from repeated readings of this in-part travelogue and in-part expert guide. If you are planning multiple visits to the area, it is likely you'll find "Flora of Steens Mountain" (ISBN: 0-87081-471-6), published in 2000 by Oregon State University Press, to be extremely valuable. This book meets all expectations as to what a regional flora should contain, including approachable species descriptions, some colour plates and a number of line-drawings. The UBC Botanical Garden Reading Room has a copy.

Two final bits of advice: 1) do not plan to travel the entire Steens Mountain Loop Road if you are driving a passenger vehicle. A high-clearance vehicle is required for the southern portion of the road; it's a pleasant drive on the northern portion of the road, even if you have to double back; 2) if you're staying at the Frenchglen Hotel, be sure to ask the proprietor for the story of Naughty Girl Meadow!



**GALANTHUS ELWESII 'ROSEMARY BURNHAM'**  
~ by Pam Frost

There is currently much fascination with the genus *Galanthus* in all its minute variation, so the story of the discovery locally of this snowdrop by a Club member will be of interest to other members. Rosemary Burnham, longtime member of the AGCBC, a past President, and very talented artist, discovered this distinct form in an abandoned garden just east of Vancouver.

As Rosemary tells it: "While a young and new gardener, I used to ramble around looking for plants in old gardens and lanes to add to my own. Very often my friend, Bodil Leamy, would come along, and one day, while we were rummaging around the remains of an old house in the bottom of one of Burnaby's ravines, I found a clump of snowdrops, some irises, and a few blackberry and grass-smothered rose bush cuttings. When we looked closely at the snowdrops, we noticed that they were different, having green markings on the outer segments. They were much admired but not thought important, this being long before *Galanthophilia* (about 45 years ago!). Luckily I gave bulbs to many of my gardening friends, because my clump became overgrown and I lost it.

My friend, Don Armstrong, a wonderful plantsman and gardener, decided to research the snowdrop with The Royal Horticultural Society and it was discovered to be unique and was named for me. Don gave me a few bulbs so I had it again until it was stolen from my garden! Another gardening friend gave me several bulbs, which are beginning to increase nicely and are planted in a safe place."

*Galanthus elwesii* 'Rosemary Burnham' was awarded a Certificate of Preliminary Commendation as a hardy flowering plant for exhibition in 2005-2006 by the RHS. A botanical description of this cultivar appears in "Snowdrops – A Monograph of Cultivated *Galanthus*" by Matt Bishop, Aaron Davis, and John Grimshaw. ~

**by Pam Frost**

**From the archives of the Royal Horticultural Society, UK.**

***Galanthus elwesii* 'Rosemary Burnham'**

Certificate of Preliminary Commendation as a hardy flowering plant for exhibition. Exhibited by Dr R. Mackenzie, Shilton, Oxfordshire on February 14, 2006. Description in *The Alpine Gardener* 74(4): 483–4. Specimen [WSY0070949] in the RHS Herbarium (WSY).



**A NOTE ON THE HISTORY OF THE ALPINE TROUGH, OR, THE  
QUERNS OF MISTRESS SAUNDERS AND WHERE THEY LED**  
~ by *Quentin Cronk*

Reginald Farrer in "My Rock Garden" credits "Mistress Mary Saunders" as the finder of the finest white form of *Primula farinosa*, the little bird's-eye primrose beloved of alpine gardeners. She also appears to have been the inventor of the cultivation of alpinas in stone troughs. She would even grow miniatures in the small hollow at the centre of a quern-stone, the small stones used from antiquity to grind grain by hand. The contrast between the jewel-like alpinas and the rough solidity of the rock enchanted all who saw her garden.

However, it was not until the 1920s that passionate alpine plantsmen started scouring the hill-communities of Yorkshire and upland Britain for stone troughs in which to grow their plants. In those days, rural communities abounded with stone troughs, particularly in limestone and sandstone districts. There were pump troughs, horse troughs, pig troughs, blacksmith's troughs (for plunging newly shaped horseshoes). The hunt was on.

Foremost among the hunters was Clarence Elliott, of Six Hills Nursery, who many times ventured through Yorkshire searching for old troughs in farmyards. After securing his quarry, he would send a lorry from his home in alluvial stoneless Stevenage to pick them up. In the 1930s Six Hills Nursery started exhibiting exquisite trough displays at Chelsea and the habit spread. Curiously, the mandarins of the Royal Horticultural Society decided that trough gardening was not "real gardening" and relegated trough to the "sundries avenue". Clarence Elliott's son Joe recalled later that his father's reaction was "explosive and unprintable" and troughs from the Six Hills Nursery did not appear at Chelsea again.

As trough gardening spread, before long good stone troughs were becoming hard to find. Farmers, never the rustic simpletons of popular imagination and now finding themselves possessed of an increasingly scarce and sought-after commodity, were quick to raise their prices. Happily however, advances in hygiene came to the rescue of the alpine gardener. At this time it was traditional for houses to have rough shallow stone sinks for washing (usually about 3 or 4 inches deep). In the interwar years these were increasingly replaced by more easily cleaned glazed ceramic sinks. Builders' yards were full of the useless old sinks, waiting to be broken up and disposed of. All alpine gardeners had to do was come along and collect them.

Many alpine gardeners will know the collection of troughs on the terrace by the alpine house at the Royal Botanic Garden Edinburgh.

This collection is arguably the most interesting and engaging of its type anywhere in the world. The genesis of this collection seems to have been with the delivery of an enormous trough to the Garden in 1935. It was acquired from House o' Hill farm at Barnton (now a north-western suburb of Edinburgh) and weighed over 4 tons empty. It is recorded that it arrived at the garden "slung on the largest janker that could be obtained" (janker is a scots term for a log-hailing wagon).

Settled, immovable, on the terrace it proceeded to gather smaller brethren around it. The rest, as they say, is history.

### References

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Elliott, J. (1974) *Alpines in sinks and troughs*. Alpine Garden Society, Surrey, UK

Heath, RE (1957) *Miniature rock gardening in troughs and pans*. Collingridge, London



*The Alpine House and Trough Courtyard  
Edinburgh Royal Botanic Garden  
Photo: [undiscoveredscotland.co.uk](http://undiscoveredscotland.co.uk)*

## 33<sup>rd</sup> Western Winter Study Weekend "Plant Treasures for the New Millennium"

We are deep into the second golden age of plant exploration. Far more egalitarian than the first, explorations within our own gardens are shared and enrich us with the best of variants, even as our labs push back the boundaries of breeding and propagation. Areas hitherto closed to the wanderers among us are opening, out of which emerge gems often more appropriate to the gardens of today. In this 33rd Winter Study Weekend expect slivers of greenery from around the globe; even as our speakers give us guidance in maintaining and exploring our own Edens.

**Hans Roemer** is a botanical consultant in Victoria. Hans emigrated to Canada in 1967. He received his MSc in landscape ecology in Germany and his PhD in plant ecology at the University of Victoria. Most of his professional work was in the conservation field in British Columbia. In his horticultural endeavors his ecological perspective prompted him to pay particular attention to climates. By selecting his garden plants from summer-dry climates, he has populated his Victoria garden with drought-hardy Mediterranean species, many of them "old standbys" that tend to be forgotten in the excitement over the new arrivals. Hans considers these plants ideal for much of the coastal Pacific Northwest.



**Henrik Zetterlund**, horticultural botanist of Gothenburg Botanic Garden and co-author of "Corydalis, a gardeners guide & monograph of the tuberous species," was responsible for the revitalizing alpine and bulb garden structure. A grower extraordinaire who introduced new species such as *Corydalis zetterlundii* and *Dionysia heterotricha*, Henrik will present the keynote talk, "Iran, Searching for Dionysia, New Bulbs and the Meaning of Life". His second presentation is "Eastern Turkey, New and Familiar Bulbous Plants".

**Jim Almond**, a Biomedical Scientist based in a Hospital Pathology lab, Jim is a keen grower/exhibitor of alpine plants, a hobby which has given him much pleasure for the past 20 years. Specializing in Primulaceae he has a large rare bulb collection, and jointly holds the UK NCCPG Juno collection with Kew. A member of the AGS judging panel, Jim has been on the Alpine Garden Society speakers circuit for some ten years now and is a regular contributor to publications. His first presentation will be "Sowing, Growing and Showing: An Alpine Triathlon" to be followed by "Alpines and Bulbs From Seed".

**Pam Eveleigh** is a founding member of the Calgary Rock and Alpine Garden Society (CRAGS) and has held the positions of Vice-President and Newsletter Editor. She has a keen interest in Primulas and has served as a Board member and webmaster of the American Primrose Society [www.primulaworld.com](http://www.primulaworld.com). Her garden continues to expand with alpines grown from seed as she continues to experiment with gardening methods for growing challenging species. Pam is going to serve up "Primulas of the Himalayas".



**Phyllis Gustafson** worked with native plants in the nursery trade for more than 20 years. An officer of the North American Rock Garden Society, she contributes to their bulletin. Anyone who has ever traveled in the Siskiyou knows that an extraordinary flora exists here on our doorstep. Her presentation will be on "New Plants in the Siskiyou Area". She also has recently co-authored "Wild Flowers of the Pacific Northwest" (field guide) with Mark Turner.

**Gwen Kelaidis**, well known as the editor of the Rock Garden Quarterly of NARGS for 11 years, Gwen designs, plants and maintains monumental rock gardens for private clients in the Rocky Mountain regions. Gwen has constructed extensive rock garden at her various homes over the years, and grown thousands of rock garden plants. She has just completed a book on hardy succulents and is working on a book on rock gardens. She will challenge us with ideas on both traditional and startling new design in her talk on our garden spaces.



**Philip Mac Dougal** has a background in plant biochemistry but currently works as an RN. His modest nursery, Chlorophyllia, allows him to maintain the thin veil of self-delusion that the acquisition of more plants is for his business. He has traveled extensively on hit and run botanizing ventures. Join him as he presents "Tasmania, Berried Treasure", examining the virtually unknown alpine flora of this island down under the big Down Under.

**Linda Verbeek** fell in love with flowers as a toddler and with gardening as a teen. Not coincidentally, she trained as a botanist. She and her husband love traveling and have seen flowers and birds the world over. They have a longstanding fascination with terrestrial orchids and will present "Orchids Around the World".

**Panayoti Kelaidis**, long time member of most rock garden societies, Panayoti has traveled 6 times to South Africa studying the flora of the higher reaches of the Cape, Karoo and Drakensberg. He has assembled one of the largest collections of plants from these regions in cultivation in his home gardens and at the Denver Botanical Gardens. In addition to being a plant explorer, Panayoti is a public garden administrator and student of literature and art. His first presentation will be "New Introductions", his second presentation "Plants of Natal".

There will be workshops, garden tours, book & plants sales and displays. Plus a great opportunity to meet old friends and make new ones. Phyto certificates for US residents.

Date: Friday, February 29<sup>th</sup> to Sunday, March 2<sup>nd</sup> 2008

Cost: \$210 including Saturday evening banquet (Plus \$10 per workshop)

Full Schedule & Registration on-line at [www.agc-bc.ca](http://www.agc-bc.ca)

Or: Alpine Garden Club of BC, 3307 West 6<sup>th</sup> Ave. Vancouver, BC, V6R 1T2

Hotel: Delta Vancouver Airport Hotel, Richmond, BC

Tel: 604-278-1241 or toll free: 1-800-268-1133