

Alpine Garden Club
of
British Columbia





Alpine Garden Club of BC

Internet Home Page: www.agc-bc.ca

President	David Sellars
1st V.P.	Vacant
2nd V.P.	Vacant
Past President	Linda Verbeek
Secretary	Lynn Batt
Treasurer	Philip MacDougall
Membership	Ian Gillam
Programs	David Sellars
Pot Shows	Dana Cromie
Library	Pam Frost
Annual Show	Linda Verbeek
Plant Sales	Mark Demers
Seed Reception	Marilyn Plant
Publicity	Joan Bunn
Open Gardens	Vacant
Refreshments	Dorothy Yarema
Webmaster	Chris Klapwijk
Bulletin Editor	Alan Tracey

Committee Members

Margot Ketchum - Richard Hankin - Ed Donaldson

Honorary Life Members

Margaret Charlton - Francisca Darts - Pam Frost

Linda Verbeek - Ian Gillam

Bodil Leamy - Amanda Offers

Ian & Phyllis Plenderleith - Geof Williams - Bob Woodward

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 pm and the meetings start at 7:30 pm. Please bring plants for the plant draw; the proceeds of which go toward paying for the hall rental.

Front Cover: *Mimulus cupreus*. Near Laguna del Maule, Chile. Photograph by Alan Tracey

CLUB BUSINESS

Membership

Membership notes - PayPal

2012 brings the opportunity to continue membership in the Club with its benefits of the Bulletin and the Seed Exchange for all members and meetings, open gardens, sales and show for those fortunate enough to live close to Vancouver. We hope you'll continue to enjoy and make use of these. Your participation makes the Club.

This year brings changes. After some years of utilizing the convenience of credit card payments for subscriptions and at our plant sales it has become plain that the system has become too expensive for our modest use. Increased requirements for security in the system to protect card holders and the banks running the cards have added to our expenses. While members' single annual subscriptions are mostly paid around the beginning of the year we must maintain participation for the whole year. As a result, in quieter months the fees can considerably exceed the incoming payments. Consequently we have cancelled our credit card facilities.

For members, particularly those at a distance, we have sought an alternative method of payment with similar convenience for Internet users. We have decided upon the PayPal system, very widely used around the world. This is used already by some overseas members and will require no extra effort for them to extend to the Club's subscription. It does offer convenient payment for small items (seeds?) available from on-line sources and often not easily found locally.

You do not need a PayPal account to pay by credit card through PayPal.

It's unfortunate that implementing PayPal has taken longer than anticipated. We apologize to those who have been inconvenienced by being unable to renew subscriptions and hope that by the time you read this the system is available.

We continue to accept personal cheques in four major currencies (CDN\$, US\$, UK£, €) and bank drafts or money orders. When is your subscription due and how can you check? Subscriptions are due on January 1st and you may check your status in several ways. If you take the Bulletin in printed form your membership's expiry date appears on the mailing label. If all else fails you can direct a query on-line or by mail.

There are some other changes for 2012. Our Treasurer Robert Brooke has kept the books very efficiently for longer than he originally agreed and wishes to pursue other interests. Thank you Robert. There is now a successor in view. Our President Phillip MacDougall has volunteered for the position. However this means he will step down as President and V-P David Sellars will assume that position.

Both the Spring Sale and Spring Show have declined somewhat in recent years and we propose combining the two as the Sale Director Mark Demers explained. The combined event will take place on Saturday April 7, 2012 at VanDusen with set-up on the Friday evening and sale plants organized on Saturday morning while judging of the show occurs in the back room under Linda Verbeek as Show Secretary. Both sections will open after lunch. There is interest in awarding the several trophies we have maintained over the years but there is a need for a volunteer to take charge of them.

So 2012 opens with some challenges but promises to be interesting and spring is not far away!

AGCBC Bulletin

Sadly, there is a complete lack of material for forthcoming bulletins. Growing that impossible plant, excitement in your garden, trips near or far afield are but a few of the topics of interest to other club members. Please help the bulletin editor by sending your story.

PROGRAMS

David Sellars

February 8, 2012: Talking Turkey.

In June 2011, four intrepid members of AGCBC explored the mountains of Eastern Turkey. This presentation of the outstanding flora they discovered will be given by some yet to be decided combination of Alan Tracey, Philip McDougall, Paul Krystof and Dana Cromie.

March 12, 2012. Malcolm McGregor: Saxifrages around the world and in the garden. Note the date change. This is a **Monday**.

Malcolm McGregor is a leading world authority on Saxifrages and his recent Timber Press book "Saxifrages: A Definitive Guide to the 2000 Species, Hybrids

and Cultivars" has become the standard reference work for gardeners. Malcolm was the Editor of the Scottish Rock Garden Club Journal from 2000 to 2006 and is the current Editor of the NARGS Quarterly. He lectures regularly on alpine plants and rock gardening and has travelled widely in North America, Europe, Turkey and the Himalayas observing and photographing plants in the wild.

April 4, 2012. Fritz Kummert: Two presentations starting at 7:00 pm sharp: **Andalusia and its flowers** and **Our new alpine-house and crevice garden.**

Note the date change. This is the first Wednesday of April.

Fritz Kummert is a well-known plantsman in European horticultural circles who had his apprenticeship in horticulture at the municipal gardens of Vienna. His garden at Wohngraben is situated in the south-eastern part of Austria in the province of Styria (Steiermark) at an elevation of approximately 480 m. He grows a large collection of plants in a wide range, not really specializing in any particular genus. Many photographs in Baldassare Mineo's well-known book, *Rock Garden Plants: A Color Encyclopedia*, were supplemented by Fritz Kummert.

Courtesy of the NARGS 2012 Speaker Tour. More information on Fritz: http://www.nargs.org/index.php?option=com_content&view=article&id=178:speakers-tour-2012&catid=62:speakers-tours&Itemid=121

April 7, 2012. Combined Spring Show and Sale, Floral Hall at VanDusen Garden, 37th & Oak Street, Vancouver 1:00 pm to 4:00 pm

SEEDS, SEEDS, SEEDS

Ann Dies

We save them, we collect them, we package them, we distribute them to members. Many are limited in number and we can never fill all requests, some are plentiful and we have lots left over. Some come in too late to list, some are just in excess of demand that year. What happens when the Exchange is completed?

The ideal is for the Seed Exchange to break even financially. Because of this, we package more seeds after the Exchange to sell at various venues: our Club meetings, Seedy Saturday at VanDusen Garden, our Spring Plant Sale and Show, Victoria Rock and Alpine Garden Show, and some to go for sale at the UBC Botanical Garden, from whom we receive a share of the profits. We also

donate some native seeds overseas. We donate to other good causes, such as a children's growing project (easy to grow seed), a garden club whose members are learning to grow special plants from seed, a home for children whose parents cannot keep them and where the caregivers are keen to have a garden for the children to learn from and enjoy.

Your seed is very useful as you can see. The Exchange demands a lot of time from members, but we all enjoy it and share information. Friendships are made. We are also very happy to see so many members save and send in seed for distribution as well as so many who order seed. They must enjoy the growing results as much as we all do.

ARTICLES

Growing Medium for Rock Garden Construction

By David Sellars

Rock garden plants certainly need well-drained soil but amending garden soil with sand or gravel does not solve the challenge of growing choice alpinists from high elevation natural habitats. One solution that is effective for our wet climate is to build a raised bed of growing medium on top of the natural soil. After experimenting with different combinations of materials, the best medium I have found locally is "Sechelt Sand". It can be used in rock gardens by itself or mixed with some Sunshine #4 Mix to increase the organic content. The resulting medium does not contain soil at all and the lack of soil fungi and bacteria suits high alpinists because they naturally grow in relatively sterile environments. For bulbs you can always add some leaf mould to further increase the organic content.

Sechelt Sand is used by landscapers as a bedding sand underneath pavers as it compacts well but remains well-drained. Sechelt Sand compacts because it is a mix of coarse sand and crusher fines, the rock dust left over from rock crushing at the gravel pit. It may be counterintuitive to include fines in a rock garden growing medium but there are two reasons why it is effective. First the fines make the medium firmer compared with typical sand which remains loose after placement. Secondly the rock dust in the crusher fines provides a source of mineral nutrients.

Alpine plants are well-anchored in nature otherwise they would be uprooted in strong winds, avalanches and movement of scree. Because alpine plants have evolved to be well- anchored, they are less tolerant of loose growing conditions in

the garden. This issue was discussed in my article in the Winter 2008 issue of The Bulletin. Vol 51, No 1. Since then I have learned that Sechelt Sand is not a naturally occurring sand but is a manufactured product at the quarry.

Lewisia cotyledon is an example of a plant with 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 have observed that they do not tolerate soil movement around their roots, which frequently occurs in rock gardens constructed with a coarse sand mix. The planting material in vertical crevices needs to be well-compacted before planting and even then there is likely to be soil movement over time.

Regarding the advantages of rock dust, those who follow Ian Young's bulb log at the Scottish Rock Garden site may have noticed this interesting comment.

http://www.srgc.org.uk/logs/logdir/2010Jul211279719133BULB_LOG_2910.pdf

“To replenish the nutrients I add some volcanic rock dust; a rich source of minerals and trace elements essential to the health of all plants. I have discussed the benefits of this volcanic rock dust, which is being marketed quite widely in Scotland, in the bulb log in previous years. The addition of rock dust to improve the fertility of soil has long been recognized as I have read in old journals that the quarry men took home rock dust to spread on their gardens and they had the best gardens. There is no doubt in my mind that the absence of these trace elements in the soil will cause problems in plants – much like our health would suffer if we did not receive our required vitamins and minerals- and this form of crushed volcanic rock is a very good source of these elements.”

Most alpines, particularly Saxifrages, cushion Androsaces, Daphnes and Dianthus, seem to like growing in Sechelt Sand without additional organic material, as the rock dust component seems to provide sufficient nutrients. I have *Lewisia rediviva* growing strongly in a Sechelt Sand bed but I added some slow release fertilizer around the plants last Fall as I suspect the thick root will need additional nutrients to develop.

I buy Sechelt Sand by the truck load directly from Lehigh Northwest Materials but small quantities are available from landscape supply outlets.

A version of this article previously appeared in “The Crevice”, the newsletter of the Alpine and Rock Garden Special Interest Group of the Qualicum Beach Garden Club.

Pink Mountain, British Columbia

Pink Mountain is located in north central BC and, because of its location and its unique geology for that area, is home to diverse species of plants and insects, a surprising number of which are rare or threatened in BC. The preservation of Pink Mountain as a provincial park or Nature Reserve is strongly supported by the Alpine Garden Club of British Columbia.

Proposed Pink Mountain Preserve **Ron Long**

Pink Mountain is located 180 Kilometers north of Fort St. John in northern British Columbia. The mountain is only 1700 meters at its highest point but is so far north that the summit is uniformly arctic/alpine tundra habitat.



Summit of Pink Mountain. Photograph by Ron Long

Pink Mountain and its immediate surroundings comprise one of the most biodiverse areas in BC. It supports large populations of Pine Martin, Moose, Black Bear, Elk, Whitetail Deer, Mountain Caribou and Stone’s Sheep. The bird population includes Golden Eagles, Horned Larks, Sandhill Cranes, Blue Grouse and Rock Ptarmigan.

Ptarmigan are the only birds to over-winter on the summit. They are entirely dependent on alpine willows for their survival.

Pink Mountain is internationally known in the butterfly community for its concentration of rare Arctic butterfly species.

Most significant is the plant assembly. The northern location and tundra habitat bring together a unique and rich community of rare and rarely seen arctic/alpine

plants. A comparison with similar height peaks to the west shows that Pink Mountain is entirely different from other mountains. Nearby peaks have almost no flowering plants except a thick turf of grass.

The foothills and mountains in northern British Columbia are covered by Cretaceous rock, which mainly consists of sandstone and shale.

At Pink Mountain, erosion has removed the Cretaceous rock and exposed the underlying limestone at the south end of the summit. This means that the soil derived from these limestone rocks has a considerable amount of Mg, Ca, P and salts, which the other mountains don't have.

It is the presence of these nutrients that is responsible for the unique flora found on Pink Mountain.



Polemonium boreale Photograph by Ron Long

Because of its unique geology Pink Mountain is significantly different from any other mountain in the North Peace district.

The Muskwa-Kechika Management Area gives some protection to a large area to the west of Pink Mountain. It has been suggested that this management area may contain other sites that duplicate Pink Mountain.

The entire Muskwa-Kechika is overlain by the young Cretaceous rock with limestone only exposed on the highest peaks where no soil is formed and plants cannot grow.

It is almost certain that the Muskwa-Kechika does not have a Pink Mountain equivalent.

To-date one red-listed and no less than ten blue-listed plant species have been found on the summit of Pink Mountain. Red listed plants are in danger of extinction in BC and blue-listed plants are severely threatened in BC.

Pink Mountain red- and blue-listed plants

Red-listed

Alopecurus alpinus (known in BC only from Pink Mountain)

Blue-listed

Luzula rufescens

Luzula confusa

Festuca minutiflora

Carex rupestris

Polemonium boreale

Silene involucrata ssp. *involucrata*

Oxytropis jordalii ssp. *davisii*

Ranunculus pedatifidus ssp. *affinis*

Minuartia elegans

Androsace chamaejasme

This large number of threatened species has been recorded even though there



Ranunculus pedatifidus ssp. *affinis*
Photograph by Ron Long

has never been a complete and thorough inventory of species on Pink Mountain. It is expected that further study will reveal additional red- and blue-listed plant and butterfly species.

The Conservation Data Centre confirms that there is not another site north of Vancouver that supports so many red- and blue-listed plants

The rare and rarely seen plants are concentrated on the South end of the Pink Mountain summit. The roadsides on this portion of the summit are now critical habitat for three of the blue-listed species and many of the rarely seen species.

There is a Provincial park on Pink Mountain established to protect fossil beds and rare butterflies.

Pink Mountain Provincial Park is located on the steep west side of the mountain.

The area of the park is so steep that continuous rock and soil movement makes small plant growth impossible.

No plants = no butterflies.

Pink Mountain Provincial Park provides no protection for the plants or butterflies.

Current commercial activity on the summit consists of several communication antennas and two gas wells. Several antennas are powered by diesel and propane generators. These generators create noise pollution that is audible at every point on the summit and the heavy trucks carrying fuel are destroying the road in places. The gas wells have resulted in the bulldozing of several hectares of fragile alpine habitat and transmission lines remain to be built. There is survey evidence to indicate additional wells are planned.

The gas wells are located to the north of the main plant concentrations.

The entire summit is now threatened by a plan to place forty wind turbines on the mountain. This plan has the potential to completely destroy the biodiversity of the Pink Mountain summit.

Because of its unique and rich biodiversity a portion of the Pink Mountain summit needs to be protected.

We propose preserving an area extending in the south from the last switchback on the existing road, which is at 1500 meters and corresponds to the tree line, to a point just short of the first gas well to the north.

This preserve encloses most of the plants of interest, covers only about one third of the summit and leaves the entire northern two thirds of the summit for gas and wind development.

That being said the question of the appropriateness of any wind development on Pink Mountain needs close examination from an environmental and visual point of view.

The preserve also encloses all of the antennas on the highpoints of the summit but the preserve should not affect the operation of these facilities. There must be no expansion of these facilities. The government's own land use plan provides for the protection of sight corridors and specifically mentions the Alaska Highway as such a corridor. The Pink Mountain wind farm would be clearly visible from the highway.

The land use plan also specifically lists the preservation of endangered species and habitats.

The existing road on the summit must be preserved as is.

A wind development on Pink Mountain would require a substantial road to accommodate the thousands of construction vehicles that would be used. The Bear Mountain wind farm, located south of Fort St John, required 17000 truckloads of concrete alone. The existing road on Pink Mountain would need a total rebuild and this would destroy a substantial number of important plants.

We propose that a new road be built from the base to the north end of Pink Mountain summit. This is unlikely to cost very much more than the rebuilding of the present road and would protect the south end of the mountain.

The present road would be permanently closed at the base of the mountain.

Unique and Endangered Species on Pink Mountain

Listed Plants

Alpine Foxtail (*Alopecurus alpinus*) is a grass that is red-listed in British Columbia and is in danger of extinction in the province. Pink Mountain is its only known occurrence.

Rusty Wood Rush (*Luzula rufescens*) is blue-listed and is severely endangered in British Columbia. It is only known to occur in three locations in this Province.

Northern Wood Rush (*Luzula confusa*) is blue-listed and Pink Mountain represents a considerable extension to its previously known range.

Little Fescue Grass (*Festuca minutiflora*) is blue-listed, was not previously known from Pink Mountain and this occurrence represents a large range extension.

Rock Sedge (*Carex rupestris*) is blue-listed and not previously known from Pink Mountain.

Northern Jacob's Ladder (*Polemonium boreale*) is blue-listed and is known from only a few scattered collections in the far north of British Columbia. On Pink

Mountain it occurs in three small populations. Most plants grow on the roadsides and are threatened by traffic and road reconstruction.

Arctic campion (*Silene involucrata* ssp. *involucrata*) is blue-listed. It is known from only four collections in British Columbia, two of which are from Pink Mountain. Even on Pink Mountain this species is represented by only a few widely scattered plants.

Jordal's Locoweed (*Oxytropis jordalii* ssp. *davisii*) is blue-listed but occurs in good numbers on Pink Mountain.

Bird's Foot Buttercup (*Ranunculus pedatifidus*) is blue listed and is severely endangered on Pink Mountain by traffic and road reconstruction.

Elegant Stichwort (*Minuartia elegans*) is blue-listed and not previously known from Pink Mountain.

Rock-Jasmine (*Androsace chamaejasme*) is known from only two locations in British Columbia and was not previously known from Pink Mountain.

Pink Mountain has more listed species than any location north of Vancouver (Conservation Data Centre information).

The above represents currently known information about Pink Mountain. No definitive survey of species has ever been carried out and such a study will certainly reveal additional species at risk in British Columbia.

The known flora of Pink Mountain consists of 173 species. Virtually none of these can be considered common.

Not endangered but rarely seen plants

Lapland Rosebay (*Rhododendron laponicum*) is typical of the plants on Pink Mountain. It is not rare in the province but it is rarely seen because of its remote habitat. Pink Mountain represents a considerable range extension to the South.

Frog Orchid (*Coeloglossum viride*) and **Yellow Coralroot (*Corallorhiza trifida*)** are two orchids that are not known to grow in a tundra environment anywhere else in North America. Their occurrence on Pink Mountain is unique and indicates that further study of these plants is needed to determine how/why they are able to live here.

Western Paintbrush (*Castilleja occidentalis*) was not known to occur this far North. Pink Mountain represents a considerable range extension.

Labrador Tea (*Ledum palustre ssp. decumbens*) was not previously known to occur as far south as Pink Mountain. This is a considerable range extension.

Even the Dandelions on Pink Mountain are unusual. The **Rock Dandelion (*Taraxicum ceratorporum*)** is a rare native Dandelion that is plentiful on Pink Mountain.

The importance of range extensions lies in the fact that the large number demonstrates how little is known about the plants of Northern British Columbia. Much more study is needed before development destroys these fragile habitats.

Pink Mountain provides an opportunity to view and carry out research on the plants and their Arctic/Alpine Tundra environment that does not exist elsewhere in British Columbia.

Butterflies

Pink Mountain is known worldwide among butterfly enthusiasts for its populations of rarely seen Arctic species. No definitive survey of butterflies has been carried out on Pink Mountain but it is known that at least one red listed species (Yukon Arctic - *Oeneis polixenes yukonensis*) occurs there. Much more work is required.

Bees

In 2010 a mason bee species, *Osmia aquilonaria*, was collected on Pink Mountain. It has never before been seen in BC.

Spotlight on the Andes, January 2012.

Alan Tracey

It is not surprising that there is a large diversity of unique plants in South America because South America was separated from other continents for over one hundred million years and formed a land bridge to North America only within the past few million years. The Andes mountains stretch somewhat over 8,000 km north to south and are home to approximately 20,000 plants that are endemic to these mountains. The alpine plants are particularly intriguing to alpine garden enthusiasts.

A group of four of us has flown to Santiago with the hope of exploring a portion of



A common lizard of the La Parva area.
Photograph by Alan Tracey.

both slopes of the Chilean/Argentinean Andes between approximately the latitudes of Santiago/Mendoza and Vilarica about 800 km further south. We started this trip by winding up a zig-zag road of 40 hairpin turns to La Parva at about 2850 m just to the east of Santiago and to Valle Nevado, reached by carrying on a little farther east. This area has a very rich plant life, including *Mimulus*, *Rhodophiala*, *Mutisia*, *Calceolaria*, *Viola*, *Chaetanthera*, *Nassauvia*, *Calandrinia*, *Montiopsis*, *Alstroemeria*, and *Nototriche*, to mention a few of the genera.

Although this year Spring came particularly early there were abundant plants in flower at La Parva. Unfortunately this was not true for other areas we went to.

After two days spent exploring the La Parva area we headed to Argentina, crossing the border just south of Mt. Aconcagua, the highest mountain in the Andes at 6962 m. Near this area it is possible to drive to about 4000 meters elevation up the original road leading to a now unused border post between Argentina and Chile. Numerous species of plants were found including calandrinias, montiopsis, nastanthus, violas and chaetantheras.



Chaetanthera spathulifolia. Photograph by Alan Tracey.

Chaetanthera spathulifolia is a particularly charming member of the chaetantheras and is quite similar to its close relative, the even more felted, *C. villosa*.

The early flowering season did not bode well for the dry western flanks of the Argentinean Andes and even at the higher elevation of ski lifts, the season was well advanced, if not pretty much finished. Even so, flowering plants of numerous species were found. At the ski area of Las Leñas, south of Mendoza, striking pink-petalled *Rhodophiala rhodolirion* with dark markings were in bloom. Among the other plants found were rosulate violets that, although not in flower, looked much like *Viola volcanica*. A wonderfully-coloured red and gold

Schizanthus grahamii can be found here along with the more common gold and rather more pink form. Along the road at lower elevation was found *Malesherbia*

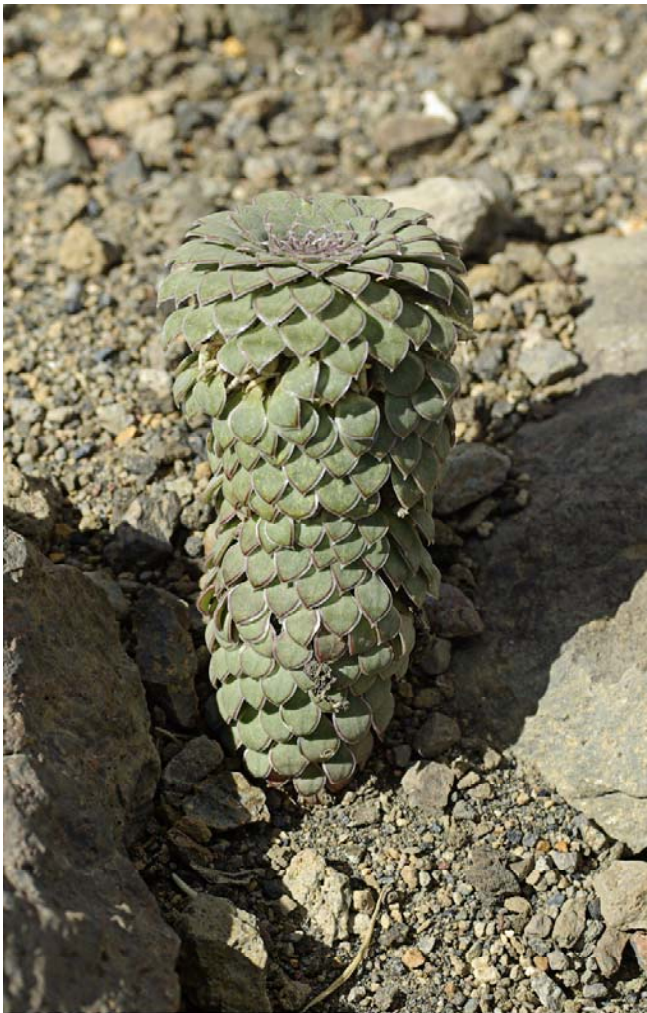


Malesherbia lirana var. *lirana*. Photograph by Alan Tracey



Rhodophiala andicola. Photograph by Alan Tracey

lirana var. *lirana*, a nice compact plant with yellow flowers. Plants found at various locations included two other rhodophialas, the yellow *Rhodophiala montana* and pink *R. andicola*.



Viola species.
Photograph by Alan Tracey.

Rosulate violet plants (possibly *Viola columnaris*) in abundance were found at the higher elevations near the ski centre of Caviahue. They, unfortunately, had finished flowering. The identification of this as *Viola columnaris* is suggested by the pointed leaves, white remnants of the flowers, and the columnar structure.

There are numerous monkeyflowers found along Andean streams and seeps. *Mimulus luteus* and *M. cupreus* (see frontpiece) are especially large-flowered and showy.

Only very little of the remarkable diversity of Andean plant life has been mentioned here. Other photographs of Argentinean and Chilean flowering plants can be found at the Club web site (www.agc-bc.ca/gallery/index.asp).