



Rock Garden

Quarterly

Fall 2012

NARGS

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The Quarterly is what we make it.

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.Front cover: *Lewisia redivia* var. *minor* – John Weiser

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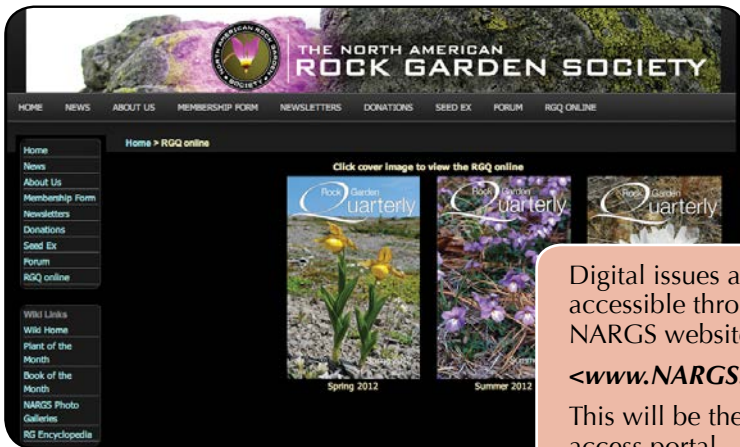
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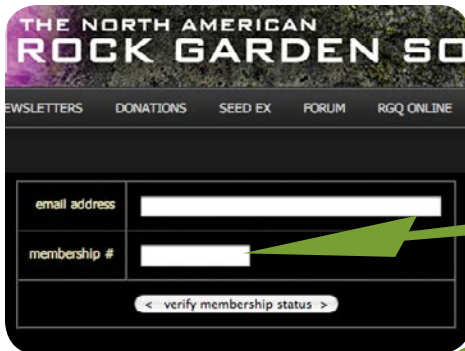


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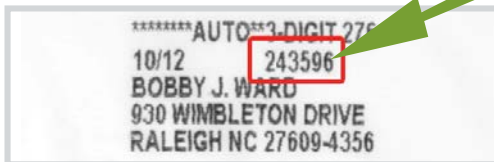
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From the Editor

IN THIS ISSUE both John Weiser, writing about Nevada, and John and Anita Watson, writing about South America, reflect on the role of tectonic movement and volcanic activity in the geology of landscape formation. In turn, they reflect on the specialist nature of the flora of their respective regions. The harsh terrain, unforgiving and hostile to the unadapted, allows specialists to flourish. They survive precisely because the conditions are extreme: if the conditions were less extreme then lots of other plants could grow there as well and competition would be a problem. Among the flora are exquisite plants that most of us would love to grow well. But such habitats are not exclusive to the high volcanic regions of the earth – it is possible to find them elsewhere.

In the age of steam trains (in England they burned coal) the beds of the railroad tracks could be a cinder-strewn habitat which most plants could not deal with. Even now, 50 years on from the last steam train, with many of these now defunct railway lines converted to trails for hiking or biking, the old track bed has a depauperate flora. Slag heaps and slurry dumps have similar characteristics. Drainage can be fierce, acid levels high, nutrients limited. Without specialist treatments, such heaps can remain deeply inhospitable to vegetation years after they are abandoned. The slopes of Mount St. Helens bear witness to similar conditions.

So many of the plants that fascinate us as rock gardeners grow in comparable circumstances. Not all are plants of igneous situations. Some grow by high snowfields, some on rocky cliffs. Some are plants that are happy in mobile screes, some in the shifting sands of deserts or coasts. Another strand of the plants so many of us grow are from woodlands and forests across the world. But understanding something about the places where plants grow can give us hints about what we need to provide for them.

I have had occasional comments from people that when something beautiful is featured in the *Quarterly* they want to rush out to get seed so that they can grow the plant in question. There is a very slight sense in some of the comments that it is my fault, in publishing the article or picture in question, as I have set out deliberately to tempt them. That is of course perfectly true, the authors and I are doing exactly that, but all I can say is – me too: alliums from the NARGS seedlist after Mark McDonough's articles, North American prairie plants after Barb Wetzels article on her prairie garden. Rosulate violas had to come from a commercial seed collector (I shall be at it again I can tell) – I'm exactly the same as everyone else – I fall for exactly the same things. And my level of success is much the same as most other people's.

I followed Stephanie Ferguson's recipe for germinating rosulate *Viola* seed and got a handful of seedlings of a number of species. The perennial species grew for up to a few months before expiring (try again Malcolm!), but a couple of the annual ones got as far as flowering.

In the last issue, it was Kim Blaxland's comments about growing *Viola pedata* in sand that attracted me since I've constructed a couple of sandbeds (pure sand – following Peter Korn) in the last couple of years. I have managed to get two plants of *V. pedata* from a nursery, one of the concolored form and one of the bicolored, and both are growing successfully in the sandbeds. I've grown the bicolored form before, courtesy of material from Ev Whittemore, but that expired after a couple of years, probably from winter damp. Better luck this time, I say.

They are not at the center of my gardening universe, but violas do always attract me. They belong to one of those genera that is very widespread, that has species with a nice diversity of form, but that, in the end seem to come in just two basic sorts. Those that you can't grow, and those that you can't get rid of. Mind you, they don't suffer the problems of campanulas – there too, there are the ones that are difficult and the ones you wish you'd never acquired. But with campanulas the major problem is depredation by molluscs – snails and slugs – and you realize that some plants must come from places where there are no slugs or snails. It's either too dry, too stony, too hot, too cold. In the wild, in the eastern Alps, *Campanula zoysii* grows



The two sandbeds pictured in 2011 when the closer one had only just been finished and the farther, constructed in the previous year, was having a new batch of plants added.

in profusion; in the garden it is eaten to extinction. Other campanulas suffer, *Campanula raineri* for example. Then there are all the other members of the family, *Edraianthus*, *Physoplexis*, and *Symphandra*: if the foliage manages to survive, the flowers can suffer; *Edraianthus pumilio* lost all its early flowers to hungry molluscs.

Looking at pictures of the habitats shown by John Weiser and the Watsons it seems likely that slugs and snails do not rank high among the problems of plants growing in either the high sierras of Nevada or of the extreme volcanic habitats in the Andes. And that will mean that there is no advantage to these plants to develop mollusc-resistance, which is what lowland plants have to do. And in turn, this means that when we grow them in a lowland garden they can be irresistible, apparently whistling up snails and slugs from ever greater distances.

This year has been particularly bad for us in this respect: we had a lovely warm February and March, and then record rainfall for three cold months April through June, and it has just been officially declared the wettest UK summer for 100 years. While many insects have suffered badly (bees and butterflies are noticeably down in numbers – bee numbers in turn leading to a poor apple crop); some have prospered: mosquitoes are doing well. But the weather has also had a dramatic effect on other wildlife. Above all, slugs have prospered – we have slug numbers that we've never seen before. So, slug-pellets (not something we usually use much), copper rings, evening slug and snail hunts, have all played a part in this year's strategy. In the end though, it is changes in the weather that bring respite; a slightly drier and warmer August has helped a bit.

For other NARGS members the meteorological stresses have been quite different and I'm sure everyone has their tale of woe to set against the rewards and pleasures. These meteorological difficulties have also meant that some people will have less seed than usual to donate to the Seed Exchange, so if you do have seed, please donate at least some of it – details are in the Bulletin Board.

Before I finish I should say that *Viola pedata*, which I mentioned earlier, is just one of the plants that I've seen in North Carolina which makes me look forward with great enthusiasm to next year's Annual Meeting in Asheville. North Carolinians delight in their flora and rightly so. Trilliums, dogwoods, lady's-slippers, trout lilies, oaks, magnolias, and rhododendrons, are key elements in a flora which is a glorious feast and which any plant-lover would be stirred by. This is an opportunity that you should not miss: spring on the Blue Ridge. I have booked our places already – it will be a treat. And, if you are still unsure, our next issue will include a look at some of the delights of the Blue Ridge in more detail.

East Yorkshire, August 31.



In the wild *Campanula zoyzii* flourishes in cracks in limestone. In the garden it gets eaten by slugs unless it is heavily protected.





Violas and sedums in the outcrop garden.

Rock Gardening on the Hudson

JOE DIMATTIO

THE CATSKILL MOUNTAINS are old mountains and the Hudson is an old river. The mountains have been worn down, and the river becomes wide with high banks, such as the majestic Palisades, as it wends its way south to the New York Bay and Atlantic Ocean. Henry Hudson, an Englishman under the employ of the Dutch, first made his way up the river in 1609, passed our spot in September, continued on past present-day Albany, turned round and brought back his claim to Europe as if he never met the Hackensack natives nor shared corn and grapes and tobacco with the local tribes of the Algonquins he encountered along the way. Yet, he returned to Europe and reported to his employers of the "Oioque" or Beautiful River as the Indians called it, and thereby set in motion the Europeanization of the Hudson Valley. The Hudson became a major entry route for Europeans and settlers farmed its rocky banks as best they could and then moved on inland. Our five-acre garden is a field remnant of these early settlers.

Opposite: View from the patio to the river. The outcrop garden sits on a ledge and then descends down to the river via walking terraces.



Two views (above & below) of the outcrop rock garden looking away from the river towards the house and scree garden. The scree garden (right) in full flower in June.



Much American history has centered on this river, in the war for independence, and the Erie Canal that brought settlers and goods into the Great Lakes region and west into the American heartland. We are located on the west bank, the poor side, since the Van Rensselaers, Livingstons, Vanderbilts, Rockefellers, and Roosevelts have their nineteenth century mansions on the eastern side.

We began gardening here in 1972 when the river was at an ecological low and almost ignored by local folks. Along the river's route were numerous waste release points, and decaying industrial sites in disuse, including the dusty cement plants that were our neighbors. But, like the sky and the river below, things change. The river has been cleaned up and is now recovering and returning to a more sustainable equilibrium. The bald eagle, herons and other exciting species have returned. There are now too many deer, though, and too little farming but things are improving.

There is little garden history here, as these were poor and practical folks and



the land going down to the river is rough and steep, the vegetation wild and vigorous. We made fires and planted vegetables. We cleared the fields a bit at a time and eventually succeeded in seeing the river that is now our dominant and defining view. We made mistakes but tried many things. Eventually, our interests turned to rock gardening and we joined the Manhattan Chapter of NARGS where we met enthusiastic gardeners and visited their gardens and shared their concerns. A major inspiration was visiting Scotland for the 2001 International Rock Garden Conference in Edinburgh.

The outcrop garden sits on a ledge at the eastern end of the field that is crossed as one moves from our house down towards the river. For over twenty years we were unaware of its potential because it was overrun with poison ivy and scrub trees that had deep roots that had invaginated the shale and rocky soil. It was tough and unmanageable wasteland, and smack in the center of our river view. My wife, Tamara, suggested that we needed to change this but I hesitated, not knowing how or where to begin. We began right in the middle



Trough for assorted saxifages with a coral stone and marble chips

Another view of the scree garden



Opposite: A collection of potted sempervivums allows their subtle variety to be fully appreciated





The patio with celadon stoneware troughs and cupola gazebo

by cutting all vegetation to ground level. We put down a heavy landscape cloth and covered it with about 6 inches of native river gravel (3/8 inch gray pea stone). We set up a simple stone bench, using two chimney flues and a bluestone slab, sat back and looked down to the river below and loved the majesty and simplicity of our empty but tame garden.

For two years we kept at clearing and laying out the space. We exposed two major ledge stones that had been worn smooth from ancient ice, but still had crevices where plants could send down deep roots. We planted various slow-growing conifers, shrubs, sedums, thymes, and dianthus, laying out natural paths of fieldstone and gravel as well as an island of yellow-green juniper, and a blue island of moss cypress and columnar junipers. One exposed stone has served as a focal point with mosses and ground-hugging plants establishing a naturalized equilibrium. This outcrop continues as a spot to rest and view the river below and the surrounding garden throughout the year.

Another alpine feature is the scree garden. After ten years it remains in creation mode with temporary plants slowly being replaced by more choice shrubs and slow-growing varieties of dianthus, phlox and thyme. We have experimented with various thymes, (*Thymus praecox*, *T. serpyllum*), *Dianthus* (*D. nana*, *D. alpinus*, *D. pavonius*, *D. microlepis*) and found that the best prostrate and freely flowering forms are slow growing; we propagate selections that have performed well for us from seed, and clone cuttings. June blooms of

thyme and sedum can come together forming lovely scenes of delicate color and textures which create miniature landscapes of great beauty.

Along with land gardening, we have potted collections of succulents and sempervivums, and troughs of smaller plants including various drabas and lovely saxifrages that perform inconsistently in our hot, humid summers. The troughs are unusual since they are uniformly of ceramic stoneware with a celadon blue glaze; they are handmade by one of us, Tamara DiMattio. They are planted in a manner meant to be seen through and echo the landscape in miniature. They are elevated on various terra-cotta pedestals and edge the patio from which one can view the greater garden and river below. In winter these troughs need to be moved to more sheltered locations. In fact, we have hundreds of potted plants that need to be taken indoors which gives us plenty of seasonal change and plenty of work that requires timing. We now need help with this arduous task but the rewards are satisfying and emphasize the seasonal nature of horticulture.

Over the years, through books and travel, we have explored aspects of horticulture and nature that have helped us to better understand our common history, that is, Life's evolving history; and we get a glimpse of what it means to be alive. Our garden reflects this philosophic victory in that it attests to the idea that individuals can help make the earth a more beautiful place; we acknowledge our debt to Voltaire.

GARDEN ACKNOWLEDGEMENTS

Thanks to Tamara DiMattio, my partner, without whom this garden would not exist; to the Wave Hill gardeners who inspire me to do better and, especially, to Gelene Scarborough and Suzannah Strazera for assistance; and to Alan Goodwin for work well done.

The Hudson River and duck blind in late winter





Mount Rose and the Carson Range, Washoe County, Nevada



The interface
of High Desert
and High Sierra

JOHN WEISER

THE VAST EXPANSE of the Great Basin meets the looming eastern escarpment of the Sierra Nevada Range along the border of Nevada and California. The melding of these dramatically harsh terrains creates one of the most diverse floral regions in western North America.

Elevations among the higher peaks of the Sierra Crest range from 14,000 feet in the south to 11,000 feet in the north. The Great Basin's sinks and valleys lie far below at 4000–5000 feet. These dramatic terrains were formed by tectonic uplifting and stretching of the North American crust. This dynamic region is still seismically active, with minor tremors and thermally active hot springs.

In eons past, volcanism played a major role in the development of the rocky soils found throughout the region. Granite, basalt and other igneous rock are the hard materials, forming the Sierra Crest. Erodible materials are clays and decomposed granite. The fine clays are the end product of volcanic ash eruptions that have been deposited in multiple

Pyroclastic ash





Altered andesite deposits

layers. Decomposed granite, a mix of coarsely grained sands, is derived by the weathering of weak granitic rock that has fractured into smaller pieces.

Humus-rich loams are restricted to riparian habitats and pockets in heavily forested uplands. Fine wind-blown silts infused with alkali salts accumulate in the pans and playas of the Basin. The Basin also has the addition of lime, in the form of diatomaceous deposits and active sand dunes, both remnants of ancient inland seas.

The landforms across the region are a patchwork of diverse soil profiles. This mixed bag of soil types, along with the extreme gradients in topography, ensures a wide range of habitats in the vegetative zones.

The rain shadow effect, on the leeward face of the Sierra Nevada massif, influences the climate along the eastern flank in a big way. On the western slope and high peaks annual precipitation is measured at between 40–80 inches per year, while on the eastern basin it ranges between 6–9 inches per year, although they may be as little as five miles apart in some cases. The majority of moisture accumulation is in the form of snow falling from November through March.



Summer skies are sunny and clear. Humidity levels are low, normally hovering at 15–25%, but often going as low as 5% in July and August. Summer thunderstorms are seen building up over the mountains, but as they move out over the Basin, low humidity and high temperatures often cause the rain to completely evaporate shortly after its release from a cloud. Dry lightning strikes accompany these types of storms, often igniting wildfires in late summer.

Summer temperatures in the upper 80s are the norm but can reach up into the 100s in late summer. Evening temperatures consistently drop by 30 to 40 degrees overnight, due to the low humidity. Wind is everpresent in the afternoon, picking up as the temperatures increase through the day, and then dying off again in the cool of the evening.

In this land of contrasts, plant communities are wonderfully adapted to withstand the extremes of cold damp winters and arid hot summers. These morphological and physiological adaptations are all geared toward water conservation. Many of the desert perennials have an obligatory summer dormancy period brought on by the depletion of subsoil moisture. Others have developed specialized leaves to slow evaporation and fleshy root systems for water storage.

One interesting and diverse plant community occurs among the lithosol soils of the foothills and alluvial fans. These vernal moist habitats skirt the lower elevations of the Eastern Sierra and desert mountains of the Great Basin. The landscape, dominated by evenly spaced gray-green shrubs, gives a first impression of low biodiversity. This is far from the truth; the reality is that the showiest species bloom early in the spring, utilizing the reserves of moisture from the winter accumulations. The trick to finding these showier denizens of the high desert steppe is to go out seeking them starting in March and continuing through early June. You'll want to keep an eye out for rocky areas with sparse shrub cover or unusually colored soils. These areas often provide extra resources of moisture due to lower competition. From time to time you will discover an exceptional site hosting an abundance of ground hugging, gardenworthy species.

One such alluvial fan in Washoe County comes to mind as I write this article. Located west of Reno at an elevation of 5300 feet, this special fan covers about forty acres. Tilted toward the east, the slope gently rises toward the west until it meets the base of another, yet higher, fan. The lean leptosol soil at this site forms an interlocking matrix of mineral clay and fractured basalt. Vernal saturated, these fans dry down by the end of June to become bone dry and unyielding. The ethereal desert perennials found on this forty-acre fan are all choice candidates for inclusion in dry-land gardens and sand beds. To grow these desert perennials in climates with high summer rainfall will require a lean, very sharply drained, planting medium. It is good to remember that the mineral soils they thrive in contain very little humus. In the photos that follow, I will give a brief description of some of the garden-worthy species found on this site.





Foothills of deep ash

Eroding basalt







Viola beckwithii — Beckwith's violet. From early March through mid-May on volcanically derived lithosol slopes, one is likely to come across this gem of the Great Basin sagebrush steppe. The pubescent, sage green, bipinnately dissected tufts are often seen growing as fairy rings. The true show-stopper is the display of vibrant bicolored flowers dancing in the wind just above the foliage. The lower three petals come in a multitude of shades, from deep purple through violet/blue to white. The upper two petals are a saturated deep red/purple. They all meet in a central eye, of buttercup yellow lightly penciled in purple.

Viola beckwithii grows in poor, rocky, mineral clay soils and depends upon ample spring moisture to perform well. By late June it is done flowering and setting seed. The foliage dies back as the soils dry, leaving no trace that it is hiding underfoot. Little crowns, or pips, with their slender rhizomes, reside in the rubble about 6 inches deep. They do not extend their reach for more than 1–2 inches each season. The clonal fairy rings measuring 8–18 inches across must take many years to develop from the original plant.

The key to cultivating this dryland violet is a summer drying period from late June through early November. Its native habitat receives very little moisture in the hot summer months. The range of *Viola beckwithii* is the Northern Great Basin at elevations of 3,000–7,000 feet. Two very similar and choice violets from Oregon and Washington are *Viola trinervata* and *Viola hallii*.





By the time *Viola beckwithii* is in flower, the basal rosettes of the winter-growing perennial *Lewisia rediviva* var. *minor* (bitterroot) are very evident. In late winter and early spring they dot sparsely vegetated slopes. The rosettes of bright green sausage-shaped leaves make me think of sea anemones stranded in the desert.

As temperatures moderate these leaves begin to elongate and arch out around the crowns. This photograph gives a sense of this wonderful early spring with the rosettes of *Lewisia* in the foreground and the flowers and foliage of *Viola beckwithii* up the slope behind them.

In early June the clay soils they inhabit begin to slowly dry and the *Lewisia* leaves desiccate and disappear to be replaced by tapered pale green flower buds. This is your cue that another show is about to begin



Lewisia rediviva var. *minor* — Bitterroot is a spectacular wildflower well suited to dry naturalized gardens. The delicate snow white flowers hover just above the ground. The flowers of var. *minor* are about a third smaller than found in var. *rediviva* but by no means insignificant. Always white, they average 2½–3 inches across, with many sporting soft pink stamens. After the flowers are through strutting their stuff, summer dormancy ensues.

In cultivation, during its rest period, it is important to minimize moisture in the soil as much as possible. The tuberous storage roots have a tendency to rot if kept wet for extended periods.





Lewisia rediviva is found across much of Western North America well up into Canada and as far south as Arizona. The western edge of its range falls along the eastern flanks of the Cascade/Sierra Crest, and then is bounded on the east by the Northern Rockies and Wyoming plateau. Variety *minor* is restricted to the eastern Sierra Escarpment and Great Basin. Locally it is found growing on sparsely vegetated clay slopes, and ridges at elevations of 2,500–8,000 feet.





Lithophragma glabrum — Bulbous woodland-star is typical of the sort of saxifrage family member you find in such seasonally arid habitats. At the right time it can give a pretty show with its pale pink flowers. But like so many other plants in such habitats, it will die down quickly, surviving the dry season as small bulbils.



Paeonia brownii — Native peony is a beautiful and classic plant of the American West with thickened blue-green glaucous foliage. After flowering, it dies down and has a very long dormancy through to the following spring - very similar to the behavior of *Lithophragma* and bulbs from the same areas such as *Allium* and *Calochortus*.





Astragalus purshii var. *lectulus* — Woollypod milkvetch is an attractive densely matted perennial pea. Its silvery tomentose foliage is the perfect backdrop for the pale pink to hot pink racemes of flowers. In late spring the plump white woolly fruit pods appear, at first sight looking like moth cocoons scattered around the prostrate mats. Eight varieties of *A. purshii* are spread across the Intermountain West, Central Rockies, and Northern Great Plains. With its wide distribution and variability, *A. purshii* is a good example of a species that exploits the same adaptations to survive in both desert and alpine environments. Elevations can range from 1,400–11,000 feet.



Allium parvum — Dwarf onion is a rarely cultivated dwarf species from rocky mountainous sites in the western USA.

Its two narrow flattened basal leaves are strongly curved, or sickle-shaped. The sessile dense umbels of bright white to rose flowers are no more than 1 inch tall.

A colony of this miniature onion in bloom can look like scattered gems as they flash against the drab gravelly substrates they prefer. The bulbs of this species are pea size and sit about 2–3 inches deep. Summer dormancy is initiated shortly after flowering.

Allium parvum is an excellent candidate for a dry trough. It is found at elevations of 4,500–8,000 feet.



Eriogonum douglasii var. *meridionale* — Douglas's buckwheat is a magnificent mat-forming sub-shrub for the dry rock garden. The silvery leaves are densely lanate on both surfaces and form tight cushions 2 inches tall and up to 1 foot across.

In early spring these ground-hugging cushions are studded with yellow 1 inch diameter pompoms suspended atop slender 2–3 inch scapes. In bud these capitulate inflorescences are blushed with ocher red. As the season progresses, the flower heads dry, taking on rich coppery tones through the summer.

Douglas's buckwheat is found on rocky, sparsely vegetated open flats and slopes from central Washington south through eastern Oregon, western Idaho and the eastern Sierra Nevada Escarpment of California and Nevada. Found at elevations of 4,500–8,000 feet.

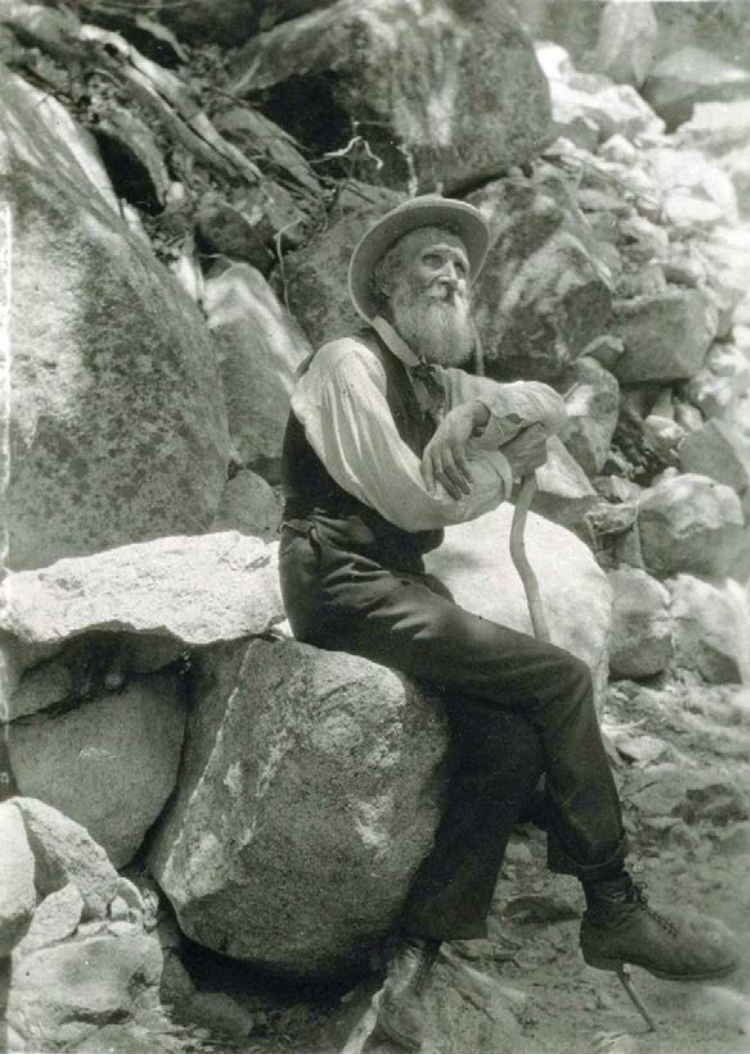




It's soon obvious that among the plants you can find in the extreme west of Nevada are some of the most attractive of North American rock garden plants.

Astragalus purshii vies with *Lewisia rediviva* and *Viola beckwithii* on the wishlists of many rock gardeners. Peony and buckwheat would grace any rockery. But there are also paintbrushes, mariposa lilies, buttercups, phlox, and composites.

In the next issue John Weiser will discuss some more of the desirable and gardenworthy species found in this southern corner of Washoe County, and show some aspects of his spectacular dryland Reno garden.

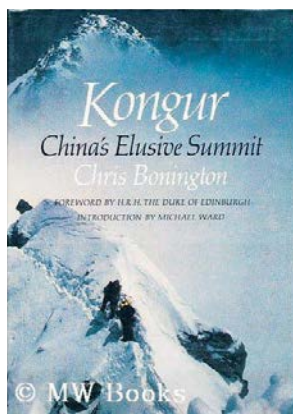


John Muir, photographed in 1907

It puts the roughest mountaineer on his good behavior

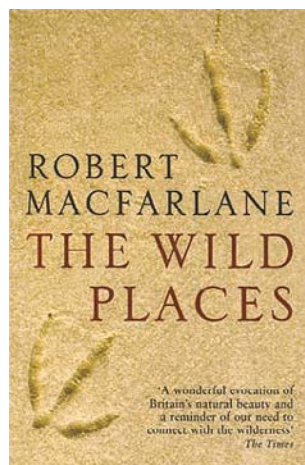
TIM INGRAM

IN 1982, THE eminent mountaineer Chris Bonington authored a book entitled *Kongur, China's Elusive Summit*. Kongur Tagh lies in China's furthest western reaches in Xinjiang province, north of Tibet, and on the border with Tajikistan, Kyrgyzstan, and the Pamirs. The peak was unclimbed and, at the time, only just opened to western mountaineers. Tellingly, of all my books on mountaineering, this is the only one that has a short section on the flora and fauna, with guidance on the former by Christopher Grey-Wilson, then at Kew. Mountaineers, in a sense, have only one purpose, to get to the top, and plants seem likely to hold little interest to them. Why is this? And why is it with the multitudes of people drawn to the mountains for recreation and fresh air that so few find the plants of more than passing beauty? How many consider that they might be grown in the garden? How many frequent the wondrous specialist nurseries run by individuals as adventurous in their way as Chris Bonington and his team of climbers?



Writers on climbing and mountaineering almost invariably capture the spiritual dimension that goes hand in hand with discovering these remarkable places. This is rarely found in descriptions of the montane flora which is studied in a more discrete way. There is though a strong tradition of writing which combines the sense of place with a more detailed study of Natural History.

In Britain the mountaineer Robert Macfarlane captures this wonderfully in his book, *The Wild Places*, which takes an idiosyncratic journey around the British Isles. But one of the greatest exponents must be the Scotsman John Muir, who emigrated to North America in his childhood and writes in a way that breathes the experiences of the wilds that he discovered, as fresh today as when first penned in the nineteenth century. On the delicate Mariposa Tulip, he wrote:



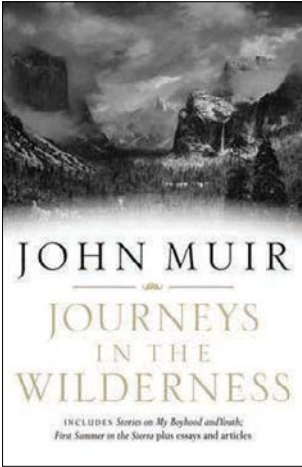
Found a lovely lily (*Calochortus albus*) in a shady adenostoma thicket near Coulterville, in company with *Adiantum Chilense*. It is white with a faint purplish tinge inside at the base of the petals, a most impressive plant, pure as a snow crystal, one of the plant saints that all must love and be made so much purer by it every time it is

seen. It puts the roughest mountaineer on his good behavior. With this plant the whole world would seem rich though none other existed. It is not easy to keep on with the camp clouds while such plant people are standing preaching by the wayside.

And he gives me my title to this essay: "It puts the roughest mountaineer on his good behavior", and so it does. This comes from *My First Summer in the Sierra*, part of a compilation of John Muir's writing entitled *Journeys in the Wilderness*, and online at <http://archive.org/details/myfirstsummer00muir>,

which has been my introduction to this very remarkable man. Just a simple diary of taking sheep up to high pasture in Yosemite, vivid, sometimes exaggerated, written in such a way that the reader is there with him and drawn along.

There are asides on the importance of bread and beans, the making of tea, the stubbornness of sheep, the plants, and especially the birds, and all so naturally put together that those who have travelled and camped in the mountains will recognise them immediately. He is so compelled by the landscape that when trying to get a closer view of Yosemite Creek cascading into the valley below, he seeks a narrow ledge to reach closer to the edge. Here is immense drama, and danger,



Yosemite Valley (Chensi Yuan)

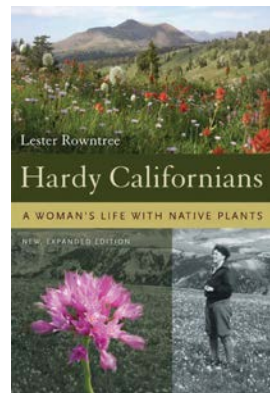
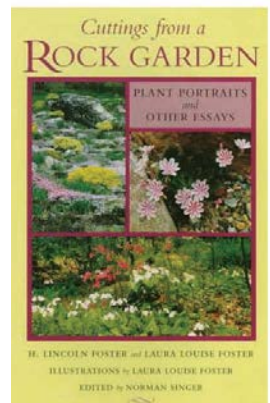
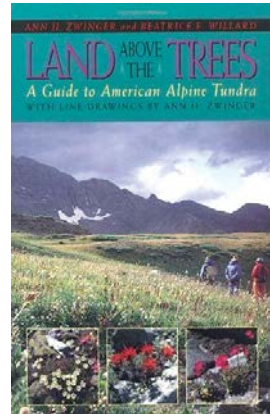


and yet described as everything else, whether the willfulness of sheep or the beauty of the native trees. Again this will resonate with all of us who are drawn to look over the edge in the mountains; maybe a childish curiosity, but one that some never lose.

John Muir's huge contribution to the conservation movement at a time when there seemed little control over the despoilation of the environment, is well known, and as pertinent today as ever. It is no surprise that other wilderness fastnesses around the world have imbued writers and travellers with a similar philosophy. In the early 1980s the proposal to dam the Franklin River in Tasmania caused an unprecedented public outcry, prompted by the tireless activities of environmental campaigners and intervention of international figures like the botanist David Bellamy. Such places capture the heart but often only when the threat to them is very real.

In America John Muir's writings must have stimulated many other people who find the purity of wild landscapes an antidote to the excesses of modern life. I am grateful to Anne Spiegel for introducing me, via the NARGS Forum, to *The Land above the Trees* by Ann Zwinger and Beatrice Willard, a guide to the American alpine tundra. This book was first published in 1972, and for modern readers accustomed to colour photography and a more prescriptive style of writing, it presents the mountain flora in a reassuringly intimate and yet very accurate way, beautifully illustrated with delicate pencil drawings. It is a lovely book to read, full of insight and knowledge, and reminds me very much of *Cuttings from a Rock Garden* by Lincoln and Laura Louise Foster, with the same fine writing and exquisite illustrations.

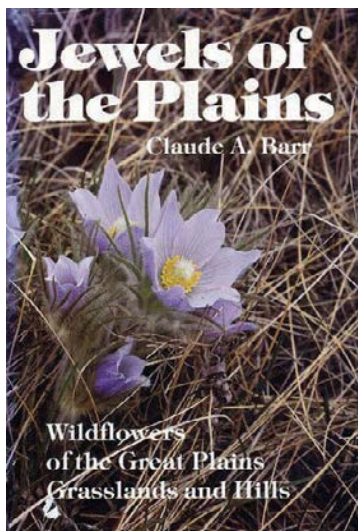
Other writers, in America notably, approach the flora in the same way, and especially when one aspect is on collecting plants and seed and growing plants in the garden. A good example is Lester Rowntree, who studied the flowers of California and wrote of them in her classic book *Hardy Californians*. Particularly for readers like myself who have a fascination with such plants but have never been able to visit these regions, there is huge enjoyment from reading accounts by someone so devoted to studying the plants and their environments. I quickly



turned to the chapters on buckwheats and lupins, both favourite genera of mine, and have resolved to try growing more of these again. The chapter on violas is a delight yet to come. As a result of this I have discovered more recent books on gardening with Californian flowers, by writers like M. Nevin Smith and Carol Bornstein, David Fross and Bart O'Brien. Very much of this remarkable flora has still to be discovered by British gardeners, and I and look forward to learning a lot more about it, even if much is less than easy to grow in the UK.

However, I think the book that above all has captured my imagination

is *The Jewels of the Plains* by Claude Barr. This is a wonderful evocation of discovering plants in the wild and growing, propagating, and distributing them to fellow gardeners. The fact that he writes so eloquently about the Great Plains and the plants growing there, must be accentuated by collecting and growing them at his home, where they can be appreciated over again and shared with like-minded gardeners. As with Lester Rowntree, Claude Barr wrote extensive articles on the plants that he grew, many in this publication when it was the *Bulletin of the American Rock Garden Society*, and listed in the bibliography to his book. These must be a goldmine of information!



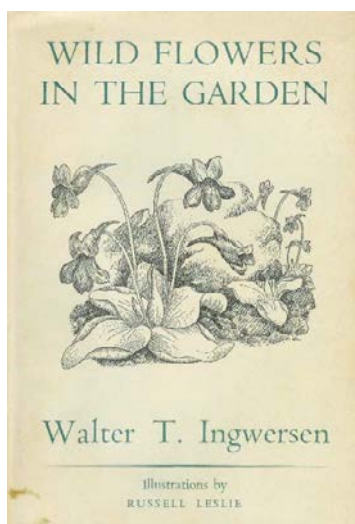
More recently contemporary writers like Robert Nold and Panayoti Kelaidis, both of whom I have read with great appreciation, have captured a new and unique style of alpine gardening, so suited to the hot and dry climate of the American West, and so exciting from the viewpoint of more traditional growers like myself in the British Isles. The prospect of growing some of these plants, and trying new ways of cultivating them, is very refreshing.

Such writing has become less fashionable as the modern information age records the world in ever greater detail. But for those who have a long established and personal knowledge of particular places, the plants will always hold a deeper impression than a simple scientific record. In the garden they recall places and people. And, more than this, they maintain that sense of diversity which is so important in a rounded view of the world. The garden has the capacity to reconcile conflicting emotions because of its ability to teach so much about the nitty gritty of growing plants, along with their place in the wider world.

In Britain, which climatically and historically has always held centre stage in the world of gardening, our naturally impoverished flora has meant that we have always looked beyond our shores for plants. However, a consequence has

been that our gardening and garden writing, has tended to be more encyclopaedic than ecological. The former, because of its erudition, can come to dominate, but it is the latter that gives a garden its real harmony and persistence. The two together give that wonderful richness that satisfies all the senses. Walter Ingwersen, the doyen of alpine nurserymen, actually turned to the native flora of the British Isles for one of his most descriptive books, *Wild Flowers in the Garden*, proving that it is what lies around you, either actually or from experience, which creates the deepest impression and the most enjoyable garden.

This view of gardening will always have value, and runs counter to the consumerism that pervades much of our lives. It places us properly in relation to the Natural World in a way that gives freedom of expression, but also a balanced view of responsibilities, and the impact we have on our surroundings. It is one of the things we look for when we climb in the mountains.



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Volcán Llaima during its latest full eruption. November 2009. (Kim Blaxland).

Fire and Ice: Rosulate Viola Evolution

Part One – The Stage is Set

JOHN & ANITA WATSON



“WHERE DO ROSULATE violas come from?”
“Why are their plants so different from other violets, yet their flowers the same?” “How come some get to look exactly like the ground they grow on?” “Why do they occur in South America and nowhere else?” “Why are they so difficult to grow?” Why this? Why that?

If small children insistently irritate busy adults beyond words with such never-ending mechanical interrogations, should we become exasperated with ourselves when our own minds generate the same inquisitive itch? If it represents a genuine thirst for knowledge based on observation and reflection, and not just a parrot-like stuck needle with no real thought or purpose behind it, go with the flow. For then it becomes the very basis of human progress, the absolute antithesis of taking things for granted.

What follows in this first of a three-part survey is an attempt to share our tentative answers to some of those opening queries and others like them. Indispensable as second-hand knowledge gleaned from botanical literature and herbarium specimens is, for us these captivating little plants are, primarily, vibrant “living, breathing” entities – and that’s how we prefer to meet them, face-to-face in the field. That’s how we trust you will find them presented here, too.

It should be clearly appreciated from the word go that this account doesn’t pretend to be an authoritative reconstruction of the evolution of Andean violas. They are a large and surprisingly heterogeneous group, scientifically known as section *Andinium*, with about 115 species known, several still undescribed. As will

become apparent, not all are in fact rosulate.

At best this account should be seen as no more than a reasonably informed first-off conjecture of how their main lines of development may have evolved, with the added intention of stimulating further debate and study. As we are acutely aware, and our colleague and friend, the *Viola* authority Thomas Marcussen has underlined, “We’ll need that DNA phylogeny to be really able to test any of these hypotheses.” He then added very generously, “In any case your scenario does not sound unlikely ... it is the most educated one thus far.”

AND IN THE BEGINNING

Received wisdom has it that during the warm, ice-free period of the late Cretaceous, from about 100 million to about 70 million years ago, what is now South America – where rosulate violas are distributed – was covered throughout its length and breadth by lush tropical forest. There were no alpine or equivalent environments. Without doubt though, as in such conditions today, there must have been clearings, open riversides, and other lighter habitats where low plants and a thriving understorey would have established. By then, too, the development of the flowering plants (angiosperms) had already been long underway, with the Violaceae in existence about 75 million years ago (detail kindly supplied by Thomas Markussen). It is speculated that among the shorter, bushy flora were primitive ancestors of our modern violas. Indeed, the tropical lowlands of South America still harbour the closest living relatives of *Viola* to this day: a pretty herb, *Noisettia orchidiflora*, and the small sub-shrubby *Schweiggeria fruticosa*. There are even some actual woody, true violas of somewhat gawky, open habit, such as *Viola portalesia*, which belongs to a section of ancient lineage within the genus, the small section *Rubellium*.

This prolonged, stable idyll was eventually shattered by a series of dramatic, far-reaching geological, climatic, and biological changes. Some 65 million years ago, roughly contemporary with the Cretaceous-Tertiary mass extinction event and the last of the dinosaurs, tectonic rifting began to affect the region. It triggered Andean uplift and accompanying volcanic activity in the south. Associated with this was the gradual onset of localized cooler, temperate conditions, which would have favoured the establishment and expansion of the Araucanian vegetation. This peaked over the next few tens of millions of

Monkey-puzzles, *Araucaria araucana*, on a high volcanic slope, the usual *Viola fluehmannii* habitat. Araucania Region, Chile. 5 March 2008. (John Watson).





Typical early development of a recent volcanic ground-level habitat. Kim Blaxland in action on Volcán Llaima, undeterred by the elements. Note *Viola cotyledon* embraced by juvenile monkey-puzzle in foreground. Araucania Region, Chile. December 5, 2003. (Anita Flores).

years and extensive remnants still exist today in southern Chile and adjacent Argentina. It became dominated by the monkey puzzle, *Araucaria araucana*, perfectly adapted to open, temperate volcanic landscapes. Tropical forest cover diminished, giving way to temperate woodland and airy upland *Araucaria* groves. Here and there trees disappeared altogether, replaced by ashfields, lava flows and steadily elevating, volatile, volcanic heights. As a result, new, rich, but challenging and vacant ground-level habitats began to be available.

Modern Andean tectonic uplift really began to take a major role in shaping vegetation communities about 35 million years ago, around the end of the Eocene. Almost simultaneously, a drop of 4°C overtook the world - global cooling, no less! The first permanent Antarctic ice-sheet formed, and seasonal snowfall would have increased dramatically on the world's high mountains, which included the young Andes.



Viola fluehmannii. Volcán Llaima, Araucania Region, Chile. December 1994. (John Watson)

What we today label the genus *Viola*, with all its instantly recognisable violets and pansies, is considered to have appeared in some temperate part of what is now the Andean region of southern South America at this very moment in geological time. Molecular analysis shows that the Andean *Viola* lineage (section *Andinium*) diverged from the remainder of the genus very shortly afterwards in terms of biological time.

The early manifestations of *Viola* proved themselves among those genetically plastic enough to exploit the momentous environmental and climatic changes. Their starting point as rather delicate herbs, or open, twiggy, broad-leaved, fragile and brittle subshrubs, was maintained in the temperate woodlands, where they probably also evolved into the neat little tufted violets we are so familiar with. Currently, although the environmental circumstances are generally agreed upon, there is no clear picture or consensus about the type of founding *Viola* that

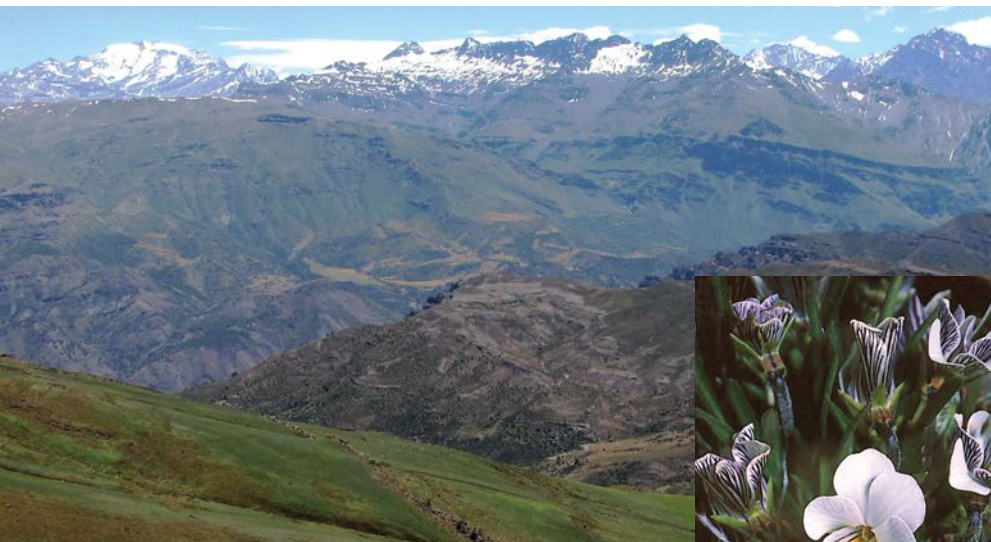


initiated the rosulate "branch" of the genus, or of the subsequent links connecting to species alive today. Our, John and Anita's, conjecture is that another strand of the same perennial violas adapted to ever-ascending Andean elevations, more open exposures, increasing drops in temperature, and the physical threat of cinder bombardments and unstable lava-rock slips. They became densely ericoid: little depressed cushions or mats with close-set spirals of linear, yew-like leaves and rubbery, flexible branches which bent rather than snapped under stress. Further protection was gained from growing in open araucaria stands, as they do today, for this successful format may still be observed in delightful little *Viola fluehmannii*. In our view this is notionally close in appearance to ancestral developments and an identical or similar growth form was, we speculate, the prototype of section *Andinium*, the rosulate violas. We regard this suppositional phase as likely to be their first adaptive evolutionary wave.

Uplift coupled with severely lowered temperature gradients, even during the height of the growing season, gradually eliminated all tree cover above certain elevations, with evolving mountain steppe ecosystems and, eventually, occasional grasslands taking over the more favourable exposures. Even though the Araucanian shrublet violas were not equipped to withstand such extremes and total exposure either, the new conditions gave their development a boost in a different direction. It was a case of adapt or stagnate.

We theorize that they adapted in classical alpine fashion by progressively shortening their branches until they became hardy tufted cushions of linear leaves, squatting down among dwarf patches of the shortest steppe flora, in alpine turf when it arrived, and in the sheltered lee of rocks. Such seems to have been the success of this rather primitive, ill-defined rosette configuration that it not only replaced the preceding ericoid type, which retrenched back in its relict Araucanian fortress, but eventually spread as a second adaptive wave. It certainly got as far as the present tropical limit of the Andean violas where the only remaining extensive high Andean grassland turf is still to be found – what is now known as the puna formation, so typical of Peru and Bolivia. This development has also left two survivors in its remaining suitable habitat with the accompanying requirement of sufficient regular cool humidity.

One of these survivors is the widespread, variable *Viola pygmaea*, the first rosulate viola to be discovered and described for science. The other, *V. pusillima*,



Grassy mountain steppe in the Andes (Anita Flores).

Viola pygmaea (right). Sierra de Santa Victoria, Jujuy Province, NW Argentina. (Ken Preston-Mafham)



is much less common, of more restricted range, and is in effect little more than a miniaturized version of *V. pygmaea*.

Reflecting on the fragile circumstance of the mere three living examples we are proposing as models for the two initial evolutionary thrusts – suppose they had gone extinct. With no hard evidence on which to base speculation, we would be faced with a wide and glaring gap between primitive shrubby woodlanders, or typical violets, and the highly adapted Andean rosulate group. Such are the capricious fortunes of trying to reconstruct past branches of the tree of life!

FORTHCOMING...

In the second instalment, in the next issue, we shall explain how we believe the Andean violas took off from this initial springboard to change over time, adopting the ultimate rosulate form we know and love today. They have intrigued plant hunters and alpine gardeners since Harold Comber made them known to us in Sampson Clay's 1937 *The Present-day Rock Garden*. Maddeningly, they have also, so far at least, proved themselves resolutely intractable in cultivation for all but an obsessively dedicated handful of specialist plantsmen-growers.

The final part will review the equally attractive and fascinating annual species which form a significant minority and are considered by us to be among the most recent evolutionary lines of the section.



Volcán Copahue, Neuquén Province, Argentina. The type site of *Viola* \times *blaxlandiae*. November 28, 2009. (John Watson)

A new nothospecies in section *Andinium* W. Becker of *Viola* L. (Violaceae) endemic to southern Argentina.

JOHN M. WATSON & ANA R. FLORES

The first known and identified natural hybrid (nothospecies) of the Andean rosulate violas (sect. *Andinium*) is described and compared with its two parent species. Its significance as an indicator of possible active and stabilized hybrid evolution in the section is discussed. The novelty, *Viola* \times *blaxlandiae*, is named in memoriam for our great friend and dedicated fellow viologist, the late Kim Blaxland.

Keywords: active evolution, hybrid origins, monstrose form, Patagonia, polymorphic, species stabilization.

INTRODUCTION

For twelve days bracketing the end of November and beginning of December 2003 Kim Blaxland found a window of opportunity to fly down to central Chile during an equally brief free moment for ourselves. Our previous Southern Hemisphere *Viola* encounters together had been during formal Andean floral tours with groups, so were rather limited and diffuse. The plan this time was to take her on a hectic ten-day, non-stop, lightning round trip in our small 4WD to visit as many

different and accessible violas as possible which were known to us but not to her. It was to be violas and nothing but violas all the way. The region chosen for the itinerary was northern Patagonia in Argentina, and adjacent Chile due to its high diversity and concentration of our quarry. By the end we managed to notch up ten different *Viola* sites. These included the one on Volcán Copahue where the new hybrid was found. As a point of interest Copahue is an active stratovolcano.

Given the extremely limited time-scale and strictly defined programme, breaking ground to explore for novelties did not form part of our overall objective. Aside from that, considering the grossly inhospitable, bitter weather on the day, including lying fresh snow here and there, we had few hopes of encountering any flowering violas whatever. All the more remarkable then was noticing by chance a small group of an undescribed natural hybrid just off the well-used dirt road, and no more than a few paces from the vehicle – albeit very reluctant paces! In fact, we were all too frozen to spend more than a short while in the open and failed to locate either of the nearby parents, *V. columnaris* Skotts. (opposite above) and *V. cotyledon* Gingins (1824) (opposite below). The discovery triumphantly capped our journey just three days before its end.

Recent authoritative estimates give between 580 and 620 as the approximate number of known *Viola* species (Marcussen *in litt.*). The latitude between those provisional lower and higher figures reflects this aspect as still being under basic investigation, and also that significant numbers of new species are being discovered and named regularly. Within that count the large rosulate group, sect. *Andinium*, which contains the viola presented here, currently amounts to 92 species as accepted by ourselves, with further novelties awaiting publication (Watson & Flores *ined.*). *V. ×blaxlandiae* is highly significant for being the first unambiguously recognised sect. *Andinium* hybrid. As such it points towards potential solutions to thorny problems of identification, and opens up possible aspects of the section's evolution for consideration and investigation.

Our type discovery suggested that this unmistakable joint product of the two species on the Copahue volcano might have been no more than an extremely



Looking across the Caviahue lake towards Volcán Copahue, blotted out by foul weather, on the day we discovered *Viola ×blaxlandiae*. Neuquén Province, Argentina. December 3, 2003 (Kim Blaxland)



Viola columnaris. Near Copahue, Neuquén Province, Argentina. January 13, 2012. (Kees Jan van Zwiennen)



Viola cotyledon. Paso Lonquimay, Araucania Province, Chile, December 20, 2002. (Anita Flores)



Viola cotyledon. Volcan Batea Mahuida, Neuquén Province, Argentina. January 9, 2010. (Kees Jan van Zwiennen)

rare, perhaps even unique, event at the present moment of biological time. In that context the remarkable series of images of further examples of the same cross taken over an extensive area at Copahue by Kees Jan van Zwiene represent an invaluable expansion of our knowledge of this novelty.

TYPE PUBLICATION AND REMARKS

Viola × *blaxlandiae* J.M. Watson & A.R. Flores, nothosp. nov.
= *V. columnaris* Skottsb. × *V. cotyledon* Ging. (Figs A–F, pp. 367–370)

Type: Argentina, Neuquén Province: Volcán Copahue, near thermal pool beside road to north of volcano, 37°50' S 70°06' W, 2015m; rare, single site element of scattered dwarf Andean cinder-ash community, leg. J.M. Watson, 3 XII 2003, F.& W. 10779 (holotype SGO; isotypes SI, herb. Flores & Watson).

Natural hybrid of sect. Andinium, intermediate between parents. Growth habit of solitary, elevated, cylindrically columnar rosette, and flowers disposed in outwards facing ring on upper rim of rosette correspond with V. columnaris. Characters of V. cotyledon present are cuneate, more or less narrowly spatulate and somewhat acute leaf blades, large corollas conspicuously and strongly bearded at base of lateral and lowermost petals, and style crest concealed within throat of corolla.

Description: Perennial, glabrous, evergreen, rosulate hemicryptophyte. Axial rootstock long, stoutly flagelliform, 5–7 mm dia above. Caudex giving rise to solitary (as seen), erect, columnar, cylindrical rosette; fertile shoot 4–6 x 3 cm. Foliage present throughout shoot, spirally arranged, somewhat loosely imbricate below, more tightly adpressed on rosette face; stipules absent; pseudopetioles to 10 mm long; leaf blades narrowly to broadly obovate-spathulate, 5–8 x 3–5 mm, leathery-succulent, pale green when newly formed to dull green part-tinged brownish red, base cuneate, apex subobtusate to acute, apiculate; margin narrowly opalescent-cartilaginous. Flowers solitary from leaf axils, forming outward-facing ring immediately below circumference of rosette face. Peduncles somewhat shorter than foliage, with 2 linear-lanceolate, scarious basal bracteoles 4–5 mm long. Calyx 8 mm long; sepals unequal, linear-triangular to linear-lanceolate with hyaline margin. Corollas opening lilac, fading to whitish violet-blue, densely veined dark purple to pale violet on face and reverse of petals; base of lowermost petal yellow. Upper petals bluntly obovate, 12 x 6 mm, glabrous; lateral petals bluntly obovate, 13.2 x 7.5 mm, long-bearded with flattened, flexuous, translucent hairs towards base on upper marginal section; lowermost petal obcordate, 15 x 10 mm, long-bearded with flattened, flexuous, translucent hairs towards base on upper marginal sections, these joining to two parallel longitudinal lines of short, dense indumentum at mouth of spur; spur cylindrical, somewhat horizontally flattened, 2.5 mm long, apex emarginate. Anthers ca 2 mm long, lowest pair with filiform nectaries. Connectives shorter than anthers. Style geniculate, clavate above; crest a continuous membrane extending as two lateral triangular, acute lobes, recurved at tips. Fruit unseen. NOTE: The above mensuration data and character delineations are drawn exclusively from the type specimen and do not encompass the fuller morphological range of the taxon as now known.



Viola xblaxlandiae (fig. A), the type specimen F. & W. 10779. Volcán Copahue, Neuquén Province, Argentina. December 4, 2003. (John Watson)



Viola xblaxlandiae (fig. B), flower of the type specimen F. & W. 10779. Volcán Copahue, Neuquén Province, Argentina. December 4, 2003. (Anita Flores)

Our dear friend and colleague Kim Blaxland died last year. Although touched with sadness, we have satisfaction in naming this significant nothospecies for her. As noted, she was present at the discovery of her now eponymous viola. Details of her life's work with violas may be found in *Rock Garden Quarterly* Vol. 70 #3, which includes an account of our own times with Kim (Watson, 2012).

The type population consisted of about fifteen closely proximate mature and juvenile individuals over an area of a few square metres. All were solitary, columnar rosettes with no evident variation in form and foliage, or in the flowers of fertile specimens. A hurried wider survey revealed no further violas in the immediate vicinity. The colony was situated midway between the lowest limit of the *V. columnaris* population and the highest of *V. cotyledon*, both of these as previously known to ourselves, a separation of several hundred metres. Their distribution pattern and physically intermediate nature between both parents indicates this particular set as primary hybrid stock with little doubt, i.e. the result of a simple cross between the two parental species.

A considerably more widespread, established and polymorphic (physically variable) presence of this nothospecies in the same general upper Copahue area has come to our attention via images of Kees Jan van Zwienen (2012) on the Internet. These informative photos were taken in January 2010 during a floral tour in Neuquén by a small group of enthusiasts. As well as individuals effectively conforming to our type population (fig. C below), they illustrate variants which approach one or other parent more closely (figs D, E, F opposite). In some latter cases it is difficult to judge whether individuals exhibiting most of the characteristics of naturally very variable *V. cotyledon* actually are of hybrid origin

Viola xblaxlandiae (fig. C). A similar form to the type. Between Copahue and Laguna las Mellizas, Neuquén Province, Argentina. January 13, 2012. (Kees Jan van Zwienen)





Designated *Viola xblaxlandiae* (above - fig. D). Plant form is typical of *V. cotyledon*, but flowers show *V. columnaris* influence. Between Copahue and Laguna las Mellizas, Neuquén Province, Argentina. January 13, 2012. (Kees Jan van Zwienen)



Designated *Viola xblaxlandiae* (right - fig. E) Corolla form and venation indicate mixed parentage. Just before Copahue, Neuquén Province, Argentina. January 13, 2012. (Kees Jan van Zwienen)



Viola xblaxlandiae variant (fig. F). Between Copahue and Laguna las Mellizas, Neuquén Province, Argentina. January 13, 2012. (Kees Jan van Zwienen)



A remarkable monstrose columnar *Viola* \times *blaxlandiae* (fig. G) with adventitious rosettes. Possible instability due to introgression, Copahue to Laguna las Mellizas, Neuquén Province, Argentina. January 13, 2010. (Kees Jan van Zwienen)

or should be regarded as falling within the broad concept of that species. Long term natural hybridisation is not only an integral element in the development of speciation, but can be highly ravelled and complex, involving processes known as introgression, reticulate evolution, and stabilization. This is perhaps best understood in terms of the simplified horticultural equivalent we call back-crossing. As noted below, we hope to amplify this aspect elsewhere later on.

Most remarkable of all the undoubted hybrids is a monstrose form where a horizontal circle of ca. six vertical, sessile, daughter rosettes may be seen investing the main fertile column, about midway up and shortly below the ring of flowers (fig G above.) Kees Jan's photographs also include another individual with a solitary rosette in the same position. Very rarely we have noted similar small, vertical rosettes flush to the very base of exceptionally elongated shoots of *V. cotyledon*. These undoubtedly represent the initiation of branching. The median position of the offshoot rosettes in the hybrid plant therefore suggests a "conflict" between the *V. columnaris* gene determining limited, close-set, extended cylindrical-columnar growth and the strongly dividing and ramifying *V. cotyledon* genetic pattern.

In aggregate the hybrid is consistent in all individuals as noted by Kees Jan and ourselves for its large, bearded corollas standing clear of the foliage, and the style crest concealed in the throat. Otherwise specimens we qualify as certain or possible hybrids possess some combination of the following characters of both parents:

V. columnaris – columnar growth habit, usually of a solitary rosette; broadly spathulate and tightly adpressed leaf blades; an outwards facing ring of flowers on the rim of the rosette; distinct, dense, darker corolla venation, at least on the base of the lowermost and lateral petals; narrower, strap-shaped upper petals.

V. cotyledon – lower growth habit of multiple rosettes, usually forming a cushion at maturity; narrower, somewhat oblanceolate-spathulate and more loosely-set leaf blades; obliquely upwards-directed flowers; corollas with indistinct venation; broadly obovate upper petals.

At present the new nothospecies is only known as an Argentinian endemic. However, its distribution directly adjacent to the border with Chile suggests that future thorough fieldwork may perhaps reveal its existence in both countries.

OBSERVATIONS AND CONCLUSIONS

“... many characters of the violets do not preserve well on drying and the use of pressed specimens has led to confused determination of hybrids and their derivatives. This problem seemed most readily approached by analysing wild populations ...” (Moore 1959)

Difficulty in confidently attributing a clear-cut identity to some southern rosulate violas – from Patagonia in particular – began to come to light towards the end of the last century as more populations were discovered and collected, and interest in the study of sect. *Andinium* revived after a sixty-year hiatus. Considerable variability of a number of their defining features as well as confusing similarities have come to light. This situation may even blur the boundaries between one species and another, or fall outside the ambit of existing definitions. The situation is exacerbating with time, and tending to involve an increased number of recognised species. Among better known core names involved are: *VV. atropurpurea* Leyb., *columnaris*, *cotyledon* and *dasyphylla* W. Becker. This problem has been universally interpreted to date as indicating a far wider range of morphological variation in accepted species than had previously been appreciated.

As a consequence, where such “difficult” aggregates occur in the area covered by the standard reference *Flora Patagonica* (Rossow 1988), definitions of traditional species were widened to allow the “shoe-horning” into them of all the variants encountered. These factors have resulted in increasing difficulty in identifying populations related to several of these sect. *Andinium* complexes (e.g. Ferreyra *et al* 2006), often leading to dubious or erroneous interpretations.

Rosow (*op. cit*) observes of *V. columnaris*: “An extremely variable species, at times difficult to distinguish from *V. cotyledon*.” *Viola columnaris* was described from Santa Cruz in southern Patagonia by Skottsberg (1916). His description indicates very slight differences in the style crest arm direction and petal markings of those type collections compared to Copahue plants which accord with our strict definition of the species – as illustrated (p. 365 above). However, we do not consider these minor variations alone justify regarding them as taxonomically distinct.

Rosow went on to point out that the lateral petals of *V. columnaris* lack hairs or possess very few, while *V. cotyledon* has much larger flowers abundantly

bearded on the side and lowermost petals. Yet he also includes *V. petraea* W. Becker as a synonym within his *V. columnaris* concept. As can be seen though, *V. petraea* possesses considerable long hair on the lateral petals (below) as borne out by the type description of Becker (1925), thus making Rossow's analysis of his *V. columnaris* concept distinctly contradictory.

The discovery of *V. xblaxlandiae* in 2003 has led us to a new hypothesis of sect. *Andinium* evolution. We now consider active, large-scale hybridisation probably explains the existence in places of indeterminate mingling of characters as otherwise found discretely in constant and distinct species. We also suppose that in some cases the process has stabilized and produced well defined, distinctive populations which are nevertheless very similar to their postulated progenitors. Such an origin was proposed for *V. lologensis* (W. Becker) J.M. Watson (Watson & Flores 2011).

To the best of our knowledge there has never been previous published speculation of hybrid origin or involvement in the mainstream natural development of the rosulate violas. However, referring to other groups of violas Marcusson & Karlsson (2010) state: "Hybridization between species within the same section is common." This is supported by almost 200 *Viola* natural hybrid names as recorded in the online International Plant Names Index (2012).

As a further example, in common with our colleagues Martin and Anna Sheader we consider *V. petraea* to be a good, very stable and scarcely variable species – for us of putative hybrid ancestry. *V. cotyledon* appears to be most obvious among its likely progenitors. We find this strongly suggested by the large, bearded corolla. The flower is also projected more or less clear of the rosette, and quite different in appearance to that of *V. columnaris* (as according with

Viola petraea. Cerro Catedral,
Río Negro Province, Argentina.
January 4, 2010. (Kees Jan van Zwienen)



Skottsberg's definition), whose circle of blooms is more deeply included within the upper-outer leaves (p.365 above). *V. petraea* itself is readily distinguished from *V. cotyledon* (p.365 below) by its very broad leaves, bluntly rounded except for a tiny acuminate point at the tip (left). In addition they form a relatively tightly imbricated top to the rosette. We find the following floral distinctions consistent and useful:

V. columnaris: style crest strongly projected from the throat and clearly visible. Side and upper petals completely or almost naked, with no more than a fringe of minute hairs along the upper margin towards the base of the side petals. When present this indumentum is often hidden from view (p.365 top left).

V. cotyledon (p. 365 lower right) and *V. petraea*: style crest mainly or entirely concealed in the throat and additionally obscured by petal bearding. Side petals and rarely upper and lowermost petals notably long-bearded over part of their face. Lowermost petal frequently distinctly plicate (folded up longitudinally mid-way).

These notes represents a preliminary step towards establishing our opinion that *V. xblaxlandiae* is firm evidence of the probability of much wider scale hybridisation in the evolution of some rosulate components of sect. *Andinium* violas. Our intention is to address the topic in greater technical detail in an appropriate journal.

ACKNOWLEDGEMENTS

Our deductions have been greatly reinforced by Kees Jan van Zwienen's contribution. His selfless generosity in making available the unique and extensive photographic collection of these violas he took at Copahue, including for selective publication, not only amounts to a significant expansion and justification of our own study, but is an inestimable contribution to the pool of scientific knowledge.

The *Viola* specialist Thomas Marcussen, our academic colleague, friend, and guide through the maze of modern phylogenetic techniques and information, has kindly reviewed this text and added his valued comments and recommendations.

We are also particularly grateful to the NARGS executive and membership for the opportunity to publish a generous selection of illustrations, a factor of considerable importance in confirming the hybrid nature of *V. xblaxlandiae*.

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Some members of the Alaska Rock Garden Club at work. Left to right: Jamie Smith, Jaime Rodriguez, Amelia Walsh, Kathy Zins, Verna Pratt, and Kathleen Swick

A Tufa Garden in Alaska

CARMEL TYSVER

IN FALL OF 2009, the Alaska Rock Garden Society, ARGs, had the opportunity to purchase two tons of tufa that was already in Anchorage. Tufa in large quantities is not readily available here in Alaska and the few gardens in the area that include tufa do so because the owners made a trip to Bristo, BC, Canada, and hauled it back to Alaska. As a society, ARGs had built and maintained a rock garden at the Alaska Botanical Garden in Anchorage, and being able to add a garden of tufa excited all of us.

The director of the Alaska Botanical Garden, ABG, was approached and with her approval we purchased the tufa. We showed up at the home of the sellers in pickup trucks and loaded it by hand and then moved the tufa to the Botanical Garden. While there we found out that the seller had also mixed up a large quantity of well-draining soil that they had planned to use in the tufa garden which had never been built. Now they were moving out of state. They offered us the soil which we gratefully accepted.

This happened just before the United Way Day of Caring for which the ABG always has volunteers. With the help of the volunteers, staff members of ABG, and members of ARGs, we started the process of moving the soil into a garden



shape. It was decided to build the garden for viewing purposes along an area that is wooded with access to the garden from the ends and one side. With the help of volunteers we were able to move the soil and rock into a pleasing shape to be fine-tuned in the spring.

Since the garden is 12 feet wide, at the widest spot, and 35 feet long, we knew we were going to need a lot of plants, which are quite expensive to have shipped to Alaska. We also knew the members would be very generous in providing plants, but to propagate enough to fill the garden would take years and we all wanted the garden to look beautiful yesterday. At that point we (ARGS) decided to send a grant proposal to NARGS which they graciously granted. The grant approval notification arrived in July of 2010 and at that point we all started poring over books and catalogs picking out everyone's favorites, what we thought would work here, and what we wanted to try. Then the decision process of what to purchase, and where to purchase, resulted in more meetings and lots of emails as we wanted the grant to get us the most plants for the money we had received.

Some plants were planted last summer and fall, and this summer we were able to purchase and plant enough plants that it looks like a planted garden not a pile of rocks. To date we have planted over 100 species and varieties, many that we know grow very well for us, including *Androsace robusta* var. *breviscarpa*, *Daphne arbuscula*, *Dianthus* 'La Bourboule', *Dicentra* 'Burning Bush', *Draba nivalis*, *Dracocephalum imberbe*, *Dryadanth*e (*Sibbaldia*) *purpurea*, *Geranium* 'Tiny Tot', *Jasione crispa*, *Paederota bonarota*, *Picea glauca* 'Eagle Rock', *Saussurea* 'Kang Ding', *Saxifraga x mariae-theresiae* 'Theresia', *Silene acaulis* 'White Rabbit', *Thalictrum kiusianum*, and *Veronica oltensis* to name a few.

This fall we completed the garden by applying rock mulch. We wanted the mulch to match the yellowish color of the tufa, which our native rock does not.





We played with different imported rock and besides being expensive it was not a look we liked. What we finally decided upon was a mixture of aquarium gravel of dull yellow colors and our local pea gravel. We all know there will be ongoing replacement of both plants and rock mulch, but as of today we all agree it looks great and is a nice addition to the ABG rock garden area. Since the tufa rock is so different, we get lots of questions from staff, volunteers, and visitors, as we plant and weed the garden.

A big thank you to NARGS for helping us complete the project.



A brief portrait of *Daphne arbuscula* x *cneorum* var. *verlotii*

JAMES MCGEE

THIS IS A celebration to honor a wonderful plant. A shrub that possesses beauty with great substance. The charm of this *Daphne* makes it rise above other genera with a sophistication usually reserved for royalty. It is a beauty of such great depth that the genus name was given to it from Greek mythology. The hardy blossoms fill the mid-spring air with sweet fragrance. I would grow



The plastic pot seems to survive winter so much better than any of the ceramics I have used in the past. It is wonderful to have such a beautifully flowering shrub, now around ten years old, that is not harmed by being left outside all summer and winter.

this shrub for the fragrance alone. Overcoming cultural difficulties would be worth any effort just for the privilege of smelling its intoxicating scent.

This fragrant beauty is not a delicate debutant. It thrives on adversity, as if enjoying the challenge. Thriving in an unprotected pot through mid-continental cold at the northern limit of Zone 5, this *Daphne* has

shrugged off temperatures as cold as -15°F with wind chill below -30°F . It can even thrive through Midwestern summer heat with irregular watering. The only harm I have observed from my somewhat neglectful care was when weeds grew up high around its pot. The shade cast by the weeds made it stretch for light. This was a problem I have since rectified.

The ability of this *Daphne* to survive in a pot through cold, heat, and some neglect would make it an excellent plant to decorate the entrance of a privileged person's estate. I expect large old specimens are harder to find than the best years of champagne. Start growing a few now – the plant will grow with your wealth. Once your fortune has been earned, you will have something unique.

Bookshelf



A review by

PANAYOTI KELAIDIS of
ALPINES: AN ESSENTIAL GUIDE

plus short reviews by MALCOLM MCGREGOR

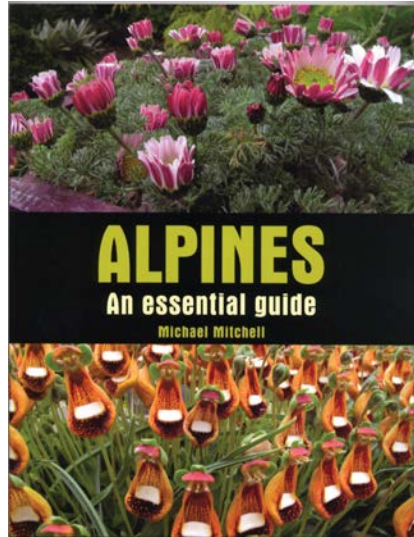
Alpines: An Essential Guide

Michael Mitchell

Crowood Press, Wiltshire (2011).
ISBN 978-0-95375-263-8
Sardcover: 144 pages, 217 color photos
9 x 7 inches. \$45.00

The heyday of the rock garden was undeniably the Edwardian Era, roughly 100 years ago, the decade prior to the First World War. At that time, rock gardening was not a hobby pursued by a few enthusiasts, but something everyone pursued as a matter of course. Handbooks and primers were essential for the millions of gardeners in England, America, and other English-speaking nations who were busy erecting rockeries right, left and center.

William Robinson produced one of the first encyclopaedic compendia of alpine plants for cultivation in the early Victorian Era, but we can blame Reginald Farrer for unleashing a veritable flood of imitations in the



Edwardian era. I have a substantial bookcase mostly filled with surprisingly similar volumes, often rather slim, usually bound in black, or dark blue, or occasionally a dark forest green. They contain almost the same disquisitions in the same order: the paeon to the Alps, the pep talk on how to adapt alpiners to the home setting, with many very similar line drawings of rock outcrops and many of the same

plants reappearing with comforting predictability from book to book, like the same suite of actors in a soap opera over the decades: *Androsace sarmentosa*, *Dianthus alpinus*, *Gentiana acaulis*, *Saxifraga paniculata*—all the stalwarts, as bold and predictable as Humphrey Bogart, Katherine Hepburn, Cary Grant and Olivia DeHaviland. As a tribute to alpinists, those same species are hanging in there (although their names are sometimes changed: *Androsace sarmentosa* morphs into *Androsace primuloides*, and now one finds gardeners “in the know” calling it *Androsace studiosorum*....so the dutiful among us must go out and change our labels!) Come to think of it, Olivia De Havilland is still alive and kicking, although born in 1916.

Each decade subsequently has generated a fresh crop of rock garden primers, handbooks and guides: they have maintained the same tried and true approach as their somewhat stuffier Edwardian progenitors: generous front matter with chatty suggestions as to how to place an amorphous and often strange rock garden construction in the constraints of a suburban setting. Troughs gradually made a tentative appearance in the 1930s, becoming more and more important over the decades, as has the alpine house in British rock garden books. Color photographs jazzed things up considerably in the 1950s: although the American classics of the genre: H. Lincoln Foster and Walter Kolaga’s tomes that came out almost simultaneously in the 1960s were still in black and white—and still two of the very best. Since then Wilhelm Schacht’s *Rock Gardens and their Plants* weighed in from Germany (in an edition edited with a foreword by Jim Archibald). This last is possibly my very favorite.

All this is preamble, to herald

Alpines, an Essential Guide by Michael Mitchell. This is not a book that has been produced in a vacuum. But it is the latest, and a very worthy successor to that tradition that stretches back a century and a half now. I have enjoyed pulling out some of my dusty old volumes to compare: we have come a long way indeed in the interim! Mitchell’s text is compelling and colloquial. This is not a journalist who dabbles a bit in alpinism repeating what he has read, but a man who has dedicated his whole life to this passion, and has condensed decades of hard work, experience and real passion into the classic chapters guiding the beginner. Mitchell begins by telling the story of his training and starting a nursery next to his parent’s home in a rainy district of Yorkshire as a 21-year-old.

His suggestions on how to go about preparing beds, creating gardens, developing an alpine house are based on things he has done again and again: you can hear his patient voice and sensible suggestions about soil, slope, drainage and siting again and again.

And he covers the gamut of issues a beginning gardener would face: I was especially pleased that he dwelt at length on garden pests including birds, slugs of course and many insects and diseases which invariably affect a maturing garden: most rock garden books gloss over these. The chapters on propagation from seed, cuttings and even layering are practical and especially helpful from someone who has done this a great deal over the decades.

Crevice gardening and green roofs make a timely appearance, although I think the former might have been illustrated with a few more photographs and some clearer disquisition: this has been one of the most momentous innovations in rock

garden art since its inception, and has been demonstrated to grow many challenging plants far better. There is a recipe and brief discussion of using hypertufa to create rocks for planting, but he only speaks of using cement for making “reconstituted stone”—concrete planters are surely very durable, but practically all serious rock gardeners eventually find a formula for hypertufa that works better for them, and is definitely lighter. Many beginning gardeners will find the extensive table of flowering times included as a sort of Appendix to be a useful tool in getting a rock garden that blooms well in the summer and autumn months instead of just the spectacular show of spring.

The inevitable Plant Encyclopaedia comprises 50 pages of the book, a little more than a third of the total. This section is beautifully laid out, with wonderful color pictures on each page...and most of the classic actors make an appearance. As one would expect of a seasoned nurseryman, many of the bullet-proof classics are represented: *Dianthus alpinus*, *Dryas octopetala*, *Gentiana verna*, *Lewisia cotyledon*, and *Primula auricula* in several selections. A certain humid bias is revealed when *Leucogenes grandiceps* appears rather than the much more adaptable and universal *Raoulia australis*. As a Coloradoan, I was flattered to see *Aster coloradoensis* bump the classic *Aster alpinus* (which also grows in Colorado, incidentally) not to mention a wealth of other late summer classics in that genus. I, for one, can't imagine a rock garden without *Aster ericoides* 'Snow Flurry' nowadays to produce its blinding, cascading white miniature blizzard in the autumnal rock garden. The only buttercup chosen is the white *Ranunculus alpestris* (not an easy plant for beginners in America at

least). The only *Potentilla* is the pink Alpine *P. nitida*—it is magnificent, it's true, although I've never seen one smothered in flowers in a garden anywhere. The endangered *Trillium pusillum* var. *pusillum* is perhaps an odd choice for that important genus...why not the commoner *T. nivale*? *T. rivale*? Or *T. hibbersonii* instead? I blush, for these are really trivial quibbles.

I was struck to see *Delosperma* 'Graaf-Reinet' included, which I presume to be the plant sold in the United States as *Delosperma* 'Ouberg' (or some awful misspelling of the latter). I introduced this delightful miniature from cliffs on a farm near Graaf Reinet comprising that namesake mountain in 1997 on an expedition I took to South Africa with Jim Archibald. It blooms spring to fall in my home rock garden where it seems to thrive in any sunny spot—a very recent introduction that Michael perspicaciously has included into the canon. To clarify, it does not grow in the Drakensberg, but on one of the innumerable ridges and ranges that comprise the East Cape highlands—perhaps containing one of the greatest reservoirs of novel plants for rock gardens not yet introduced to horticulture. The much showier brilliant vermilion and orange *Delosperma dyeri* and shocking bicolored red and purple *D.* 'Fire-spinner' have subsequently gotten wide billing in America, both coming from other East Cape mountains: I suspect these may take top billing in similar handbooks published in the future!

To somehow telescope the thousands of spectacular alpine now available to rock gardeners in Britain or North America into a mere fifty pages is thankless at best. Future editions should include an *Arabis*, *Lychnis*, *Saponaria*, and especially *Eriogonum*—any one of which has far more classic garden plants widely available to gardeners and garden centers nowadays than

Ewartia or *Chrysoplenium* which are still pretty eclectic fare. I grudgingly forgive Mitchell's omission of cacti; but coming as he does from Yorkshire, where, prithees, are the wealth of miniature rock ferns that festoon the walls and rock gardens of merry England? And not a single orchid? These are now being reliably propagated from seed, tissue culture and division: *Dactylorhiza*, at least, is pretty universal in European gardens, and making inroads in America.

It is easy to quibble—this is of course basically a primer or beginner's guide and cannot begin to be comprehensive. Any fifty page compendium by any rock gardener will be selective and highly personal, eliminating throngs of worthy plants and hobby horses.

I have personally found the internet has made my library of rock garden books all the more essential: of course the world wide web contains a plethora of links and threads and websites: there are no end of pictures and prescriptions and information. However, try clicking on a URL that goes back more than a few years and I can almost guarantee that you will not find it, or the webpage has been altered. The Web is little more than a snapshot of the present. It is evanescent and impermanent...not quite like writing on water. Perhaps more like scribbling on beach sand.

A book like Michael Mitchell's not only comprises an anthology of a keen nurseryman's life work, it is a concrete, permanent record of our art as practiced in this decade that can stand alongside any of its predecessors, forming together an ever rising literary monument to the art of the rock garden. I've been pleased to have it on my bedstand and recommend that you add it to yours.

SHORT REVIEWS

Fall & Winter Bloom in the Solar Greenhouse

James L. Jones

ISBN 978-1-47001-566-4

10 x 7 inches,

Softcover, 168 pp.

\$35.00

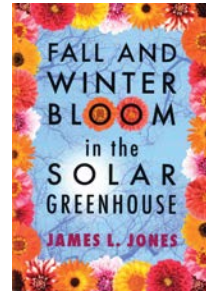
This self-published volume by past NARGS president James Jones is written from his long experience, and his conversion of

heated conservatory and greenhouse, to greenhouses heated solely by the sun. Nevertheless, don't be fooled: his "sunhouses" – his term for solar, or unheated, greenhouses – are carefully calculated to provide different winter habitats with three different minimum temperatures

His concentration is on fall and winter flowering plants because, as he says, "For myself, my vision of what I wanted from the sunhouse made the choosing that much the easier: a wintertime complement to the summer garden."

Discussions on rationale, on construction, and on his calendar for his sunhouses, complement an extended listing and discussion of the plants that he recommends – and they are all ones of which he has personal experience. And they are a truly eclectic bunch – *Cyclamen rub* shoulders with *Crassula* and *Cymbidium*, South African heaths *Erica* and *Oxalis*, Australian *Protea*, *Lachenalia*, rock garden classics such as *Morisia monanthos* and dwarf *Narcissus*.

The type size is large and well-spaced. The one big problem with the

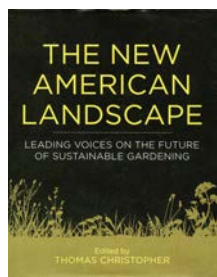


whole book is the quality of the pictures which are not as bright as the original photographs deserved. But that quibble aside, this is a genuinely personal account – idiosyncratic and great fun.

The New American Landscape

Leading Voices on the Future of Sustainable Gardening

Thomas Christopher (editor)



Timber Press
ISBN 978-1-60469-186-3
7¼ x 9¼ inches,
Hardcover, 255 pp.
\$34.95

The eleven chapters of this book are each

written by different authors and that allows a series of experts to each make their play. This is not a book aimed at rock gardeners, and it is rather hard to work out exactly who the audience is. Perhaps it is primarily addressed to those who participate in the American Way of Gardening: challenging accepted norms of vast lawns, wasteful water usage, alien planting, and the like.

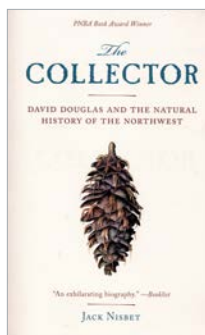
For me, individual chapters got a hold while the book as a whole did not, being too uneven. Chapters on *Balancing Natives and Exotics in the Garden*, *Waterwise Gardens*, *Green Roofs*, *Gardening Sustainably with a Changing Climate*, and *The Sustainable Edible Garden*, all attracted my attention, although for me the standout was that on the *New American Meadow Garden* with its cry of "Why have a bad lawn when you could have a great meadow?"

Some great stuff, nicely produced, well-illustrated, but uneven, so perhaps look before you buy.

The Collector

David Douglas and the Natural History of the Northwest

Jack Nisbet



Sasquatch Books
ISBN 978-1-57061-667-9
8½ x 5½ inches,
Not illustrated.
Softcover, 255 pp.
(also in hardcover)
\$16.95

Anyone who heard Jack Nisbet speak at NARGS 2012

Annual Meeting in Everett will have been intrigued by his talk about David Douglas and his explorations in the Pacific Northwest, and there was a taste of his writing about Douglas featured in the last issue of the *Quarterly*.

David Douglas is an intriguing figure: sponsored collector and explorer, contacting and negotiating with the tribal peoples, recording his travels and collections in great detail, his story incorporates so many of the aspects of the early 19th Century. Nisbet expertly weaves these together with his own narration, the world Douglas was travelling in coming alive on the page. Douglas learnt much from the people whose land he travelled through and this is reflected throughout.

Douglas explored and collected in the Pacific Northwest from 1824 (when he was just 25) through to 1833 when he set off on a long homeward journey via Hawaii where he died in bizarre circumstances in 1834.

Nisbet writes with authority but also with facility. This is a great read.

If you need books to have pictures, Nisbet's follow-up, *David Douglas: A Naturalist at Work* (from the same publisher) is due in November and should be a treat.



Viola hastata

Weeding

BARBARA WETZEL

IT IS PROBABLY my biggest failing as a gardener that I have difficulty removing good plants when they are growing in the wrong place. By many definitions that inappropriate plant is a *weed*. Probably half of my weeds are good plants which have had the bad judgment to grow in the wrong place. Of course the other half are those grungy little devils who inhabit any open space available to them. However, if I wasn't trying

to keep up with weeds in my garden by weeding and more weeding, many parts of my garden would remain unknown to me and I would miss wonderful surprises left by birds, ants, and other of nature's helpers.

Weeding is not just for today, it is the controlling and reducing of one's potential work in the years to come. It is amazing how many seeds a weed, even a good one, can produce on just one plant and how long all of them will remain viable with the possibility of germination reaching onward for years. Even that six-foot-high *Thalictrum*, which insists on showing off by growing to its great height right there in the front of the border, can produce hundreds more seeds to completely cover the front of all my borders, and, sometimes and somehow, finds its way into my rock gardens

However, a number of surprise discoveries in my garden while weeding have revealed wonderful things which I will long cherish through my photographs and memory.

Garlic mustard is a noxious weed in my area of the country and much work must be done starting in the spring to remove it before it blooms and produces thousands of seed. While weeding an interior area in my woodland two years ago, I happened upon pink *Mertensia*. When I looked around, I found many more plants in other areas of the woods and I marked these plants with flags to better enable me to follow their development.

Surprisingly, they kept the lovely pink color completely through their flowering period retaining it as they declined into dormancy. In addition I also discovered several populations of pale lavender *Mertensia*. The following year, only a couple of pink plants reappeared, although the pale lavender plant populations continued as before.

The following summer, while pulling garlic mustard yet again off a path in the woods, I discovered a lovely patch of violets with beautifully variegated leaves and yellow

flowers. I mentioned this to Baldessare Mineo while at the western study weekend. He immediately brought out a book he had on violas and found that my violet is *Viola hastata*.



Mertensia virginica - pretty in pink

While weeding some eight years ago, I happened upon an evergreen which was unfamiliar. Generally we transplant any we find, which are usually various *Picea*, to the south lot-line for increased privacy. This evergreen turned out to be an *Abies concolor*, obviously the gift of a bird. It was transplanted to an area to better display it. Additionally, some six *Liriodendron* have been discovered in the same way, trees which previously were not part of our collection. This past summer a lovely *Erythronium americanum* was discovered in our woodland while weeding. As I looked around, more were discovered. Where did they come from? Possibly they are part of an old seed bed here, finally appearing after our restoration efforts.

Did I say that not all of the surprises were equally good ones? Once while walking along the paths in our woods after a weekend away I stepped in to pull a garlic mustard plant and saw spots. When I looked around I saw more spots. They were the spots on new-born fawns. Apparently while we were gone for the weekend, a doe entered our property, which then had a new eight-foot deer fence but an unfinished gate system, delivered her babies and left them behind perhaps to forage for food. We kept them overnight, and then took them to the next-door yard – our neighbor feeds deer – thinking their mom would return there and find them. When she didn't we called a rescue center which promptly picked them up. They were fed with a special formula, taken care of, and grew to join a herd (luckily somewhere else).



There have many other instances too numerous to mention here, but certainly a closer involvement with our gardens will reveal some equally wonderful surprises if we look upon the process of weeding as an opportunity of discovery.

While weeding can be tedious and time-consuming, it does help to reduce future work. But, additionally, it encourages an opportunity to experience your garden in an "up-close-and-personal" way with the possibility of discovering a multitude of things which might be missed otherwise.

Penstemons: Treasures of the Northwest

DORIS TAGGART

THE GENUS *PENSTEMON* was first described in the mid-seventeen-hundreds and gives us the valid spelling for this varied and beautiful native, mostly found in the North American West. Traditionally *Penstemon* has been placed in the Scrophulariaceae, the figwort family, but as a result of new genetic research is now included in the expanded Plantagenaceae, the plantain family, expanded from just 3 genera to 90, and now including such others as *Veronica*, *Veronicastrum*, *Chelone*, *Collinsia*, and *Hebe*.

Penstemon [*sic*] is sometimes seen as a Greek derivative from *pente* meaning five and *stemon*, a thread, referring to the five stamens enclosed in the corolla. But penstemons have only four fertile stamens and one infertile or sterile stamen, called a staminode – almost a stamen; “pen” translates to “almost,” referring to that fifth sterile stamen. So the current spelling of *Penstemon* goes back to the original as first described. The staminode often has hairs at its tip giving the appearance of an open mouth with a hairy tongue, hence the common name “beardtongue.” Horizontal tubes grow from sturdy floral stems, and the tubes flare at the end into two lips, with two petal lobes above, and three petal lobes below that form the landing stage for fertilizing insects.

One species of *Penstemon* is represented in the alpine regions of Japan, *Penstemon frutescens*, although in the 1970s there was another

The tubular structure of the flower and the two-lipped mouth are characteristic of *Penstemon*





The Welcome Rocks on Mt. Kurodake,
Japan

Penellianthus (Penstemon) frutescens

name change, to *Pennellianthus frutescens*, for this species. The Alpine Garden Society led a group to the lofty peak of Mt. Kurodake, 6,500 feet high in Daisetsuzan National Park, Hokkaido. A cablecar sways upward for 7 minutes, followed by a chairlift for 15 minutes. From here we continued on foot past the “Welcome Rocks” – yes, welcome to the alpine zone, where the ground-hugging *Penstemon frutescens* opens its large lilac to purple flowers.

Setting this species aside, all the remaining species of *Penstemon* are North American. About 80 species grow in the Pacific Northwest, Utah and western Montana. Several grow in Washington State, sometimes



spilling over the Columbia River into Oregon. Some are rare, some are prolific, and they range from alpine habitats to almost sea level. Some species of *Penstemon*, including a number of the ones pictured here, are a challenge for nurserymen to grow: for me the challenge is to search for them in their native habitat.

Many forest roads lead up to the high country, a godsend for getting into these areas that; some have a good hard gravel surface, some are



Penstemon fruticosus

deeply rutted. The shrubby or woody *Penstemon fruticosus* is common on the drier eastern flanks of the Cascade Mountains, where well-drained road banks are covered with lavender to purple flowers. Plants are compact in stature, have good evergreen foliage, superb blossoms, and are exceptionally hardy.

Penstemon davidsonii grows at higher elevations, 6,000 to 7,000 feet, both east and west of the Cascade crest. It is a compact and bushy alpine with tiny round and shiny leaves, often sheltering in rocky outcrops. Large blue to purple corollas more than one inch long cover the plant.

Penstemon rupicola, rock penstemon, is anchored by sturdy roots growing in the cracks of vertical basaltic cliffs. Long, narrow, vibrant red tubes tumble over rocks late in spring to midsummer depending on the elevation. In the Washington Cascades, the road from Cayuse Pass to Chinook Pass around 10 miles east of Mount Rainier has pull-off areas where you can park and search for several species of *Penstemon* including this.



Penstemon gairdneri

In southern Washington the Columbia Hills rise 3,000 to 4,000 feet above the Columbia River. On dry rocky slopes at the crest of the hills *Penstemon gairdneri* grows in clumps about one foot tall. It is a unique species with unusual, mostly narrow, alternate leaves. The corolla is flat,



Penstemon glandulosus



The Columbia Hills are home to *Penstemon gairdneri* and *P. glandulosus*

lavender to pink with a white throat, the staminode partly bearded with yellow hairs.

Penstemon glandulosus grows at lower elevations on the rocky hillside or amongst the scattered trees of the Columbia Hills. It is also found on the Oregon side of the river. This species is covered with sticky glands. In June, tall sturdy upright stems support horizontal lavender to violet blossoms, with darker guide lines and a white beard.

Massive ledges and ancient lava flows drop down to Washington Highway No. 14 that follows the Columbia River. Bushy clumps of *Penstemon richardsonii* find a footing on the steep unstable talus slopes below the cliffs. Plants growing in this habitat defy easy access and the small, bright reddish-violet flowers remain out of close reach in May when temperatures have warmed up early in the season.

Penstemon barrettiae, an endemic of the eastern gorge, is one of the rarest, found only in a few sites along the Columbia River. Dense clumps of blue-green leaves are topped by erect stalks of large lilac to rose-purple flowers in April and May.



Penstemon barrettiae

Penstemon davidsonii



In 2011, March to June was the coldest and wettest on record. Rain and low temperatures lingered like the guest who would not leave. Forest roads were blocked by snow. Good luck hiking! Better luck botanizing! On August 15, snow was still 44 inches deep at Paradise, 6,000 feet up on Mount Rainier.

At last, when the path of the jet stream changed, high pressure built up, and daytime highs rose day after day to 80°F. Snow melted fast. A mile or so along the Pacific Crest Trail on Mount Hood above Timberline, the pumice slopes were snow-free, even though there were still a few snow patches to cross. Several weeks late, *Penstemon davidsonii* was in full bloom in all its glory. Native plants really are adaptable!

NARGS

Bulletin Board

News supplement to the Rock Garden Quarterly

From the NARGS President

One of the ironies of serving as a NARGS officer is the fact that, having joined NARGS many years ago solely because of my love of gardening, I'm now tasked with administrative work that I'm not particularly fond of. And, of course, some of the projects I have to work on are controversial (and expensive), which can generate heated discussion. And the controversy is self-perpetuating, since any response to a controversy simply engenders more of the same. Most of us are gardeners first and foremost, and the operational and organizational tasks were always performed by "someone else." I was aware of all this in a general way when I accepted the nomination, but was in no way truly prepared for the actual experience.

So when I sit back and think about the successes of the first 16 months of my tenure as President, my pleasure is tempered by the reality that not everyone is particularly thrilled by the changes we've wrought – in fact there are a few who are quite unhappy. I'm sorry about that - I really think the changes are in the best interests of NARGS and there are plenty of people who are enthusiastic and positive about the changes.

We're in the final stages of setting up our first-ever email election, and although in my view this is not merely reasonable, but essential, I know that there are some who disagree. Nevertheless, given the issues that our organization is confronting, this new method is clearly the right thing for NARGS and will result in the first truly democratic election in its history. So please be prepared for the email election procedures that will be announced sometime soon. And, in particular, please remember that that we need nominations for all elected positions if the election is to be meaningful! Lola Horwitz, the chair of the Nominations Committee, is looking for names, and she can be reached at <lorwitz@gmail.com>.

One of the great opportunities that NARGS provides is its meetings around North America. In October, the Allegheny Chapter is hosting the first NARGS Fall Study Weekend in Pittsburgh, Pennsylvania. By the time you get this, the meeting on October 12 will only be days away, but if you fancy a last-minute booking the link is <<http://home.comcast.net/~sylvialynch/Study%20Weekend%20Information.htm>>.

Our 2013 Annual Meeting will be held in Asheville, North Carolina, and is titled "Exploring the Flora of the Blue Ridge." The date is May 2, 2013, and the link is <<http://www.nargs2013.org/index.php>> or of course you can click through from the NARGS website <www.nargs.org>. This will be of great interest to NARGS members, and I hope you will take the time to look at the program, including the wonderful variety of trips that will be available to attendees.

We have two new chapters, located in Santa Fe, New Mexico, and Colorado Springs, Colorado. I'm going to visit the New Mexico Chapter in mid-September,

and I hope we'll be able to complete preparations for what would be the first-ever NARGS meeting in New Mexico, tentatively planned for September 2013.

Further ahead, we've contacted the Calgary Chapter and asked them to host the 2014 Annual General Meeting. Their response will be forthcoming sometime this fall, and if they can't serve as hosts, we're already getting Plan B ready, which would be a meeting in Idaho in the early summer of 2014. We don't have a chapter in Idaho, but between NARGS and several Chapters located in that region of the U.S. and Canada, we should be able to organize a truly great meeting in an area of the American West that remains virtually unknown to most NARGS members. Obviously we'll keep you apprised of developments concerning these two meetings, so check the website for updates.

Another of the other big projects of the last year has been the Internet Committee's consideration as to how we should proceed to update and upgrade the website, and it will soon release its recommendation. This will likely be both expensive and controversial, so please take the time to review the committee's proposal thoroughly and communicate your questions and concerns to your Chapter Chairs, the Internet Committee, and/or me. We will need a lot of support and cooperation for this project to succeed, so regardless of your interest in technology issues, please make every effort to get involved.

One of the challenges that any major financial commitment like the website upgrade requires is to identify new sources of revenue to pay for such an initiative. Although NARGS does have the funds to pay for projects like this, it is nevertheless incumbent upon us to solicit contributions designated specifically for the website project. Consequently, I'm going to ask the Administrative Committee and the entire Board of Directors to begin a more aggressive fundraising effort in the next quarter, so be prepared. And, in the interim, any contributions will be greatly appreciated! Be it \$5, \$50, or \$5000, your donation will dramatically increase the likelihood that we will be able to implement the full set of recommendations and get the kind of web presence necessary for our future growth. Just send whatever you can afford to Bobby Ward at <biblio@nc.rr.com> or you can donate directly through Paypal on our website.

Finally, I want to remind all of you that NARGS participates in an Amazon.com affiliate program, which generates income for NARGS if you simply connect to the Amazon website through our website when you are purchasing pretty much anything. We receive a percentage of the purchase price as a royalty, and if we all take advantage of this simple process, we could easily raise up to \$10,000 in the next 12 months. Again, all you have to do is go to the NARGS website <www.nargs.org> and use the Amazon link on the home page to take you to the Amazon website. Then, when you buy something from Amazon during that visit, NARGS gets 6% back from Amazon. It's simple, it's easy, and it's potentially a tremendous way for us to raise money for our upcoming projects.

Finally, I hope you're all enjoying the *Quarterly* in both the print and electronic versions - if you haven't had a look at that, you should. Let Malcolm know what you think, please, or post your comments on the forum. And have a great time in the garden, which is where I'm headed now that I've done my homework for this quarter.

Peter George
NARGS President

SEED EXCHANGE REPORT

I hope you have all enjoyed a splendid gardening season: triumphs with new plants and the continued growth of old favorites. In order to add new friends to your gardens next year, or renew patches of long-time residents, you will want to take part in the wonderful world of the NARGS Seed Exchange. Here's how:

Donating seeds

If you haven't already sent in all of your seed donations, there is still a brief window open to U.S. donors for sending them to our Seed Intake Manager by **November 1st**. Mail the seeds to:

Laura Serowicz
15411 Woodring Street
Livonia, MI 48154-3029
U.S.A.
<seedintake@mi.rr.com>

We certainly hope that you will donate at least the minimum 5 packets of different kinds of seeds, which will enrich both the seedlist and you as well. As a donor you will receive the donor privileges of 10 extra packets of seed and priority in having your order filled. If the seeds of your fall-blooming plants (e.g., gentians and alliums) or late-ripening ones (e.g., arisaemas) are still not quite ripe, you may send a list of these seeds to Laura right now; but you must send the seeds themselves to her no later than December 1st.

New distribution chapters

We thank the following chapters for stepping up and volunteering to handle the all-important seed distributions for the next two years: Potomac Valley Chapter will fill orders for the main distribution; Siskiyou Chapter will handle the second round orders of surplus seed. We greatly appreciate their willingness to take on these responsibilities and keep our vibrant Seedex humming.

Ordering seeds

The Seedlist will appear on the NARGS website on **December 15th**, along with clear instructions about how to place your order. To use the online ordering system, be sure that Bobby Ward <nargs@nc.rr.com> has your most current email address, especially if you've changed email accounts lately or did not use the electronic ordering system last year. Your email address is your entrée to the ordering system. Once you enter your email address on the Seed Ordering webpage, your membership will be automatically verified and you will receive an email. Clicking on the link in the email will take you to the Seedlist and your personal ordering form. Then you just begin typing in seed numbers; it's that easy.

Seed must be ordered electronically from our website unless you request a printed seedlist and order form. Printed seedlists are no longer automatically mailed to members; thus, if you do not wish to order online,

you must request a printed copy of the Seedlist and order form by contacting me no later than **December 1st**:

Joyce Fingerut, 537 Taugwonk Road,
Stonington, CT 06378-1805, USA.
<alpinegarden@comcast.net>.

In the meantime, get your pots scrubbed and the potting medium mixed, so that you'll be ready for another round - or two - of seed delights.

Joyce Fingerut, Director, NARGS Seed Exchange

🌸🌸 **The Norman Singer Endowment Fund** 🌸🌸

The NARGS Norman Singer Endowment Fund is accepting applications for grants to support projects that "advance the art and science of rock gardening." Areas that fit the grant criteria include publications, education, preservation, conservation, and promotion to the general public by creation of public rock gardens. Both individuals and institutions may apply. Endowment fund guidelines, application form, a list of previously funded projects, and photos of public rock garden projects can be found on the NARGS web site home page <www.nargs.org> under "**Norman Singer Endowment Fund.**"

Proposals for funding in 2013 must be submitted by March 1, 2013, to Jane Grushow, preferably by email <jjgrushow@comcast.net>, or by mail to Jane Grushow, 1707 Marietta Ave, Apt 3P, Lancaster PA 17603-2478

Award recipients will be announced at the Annual General Meeting in Asheville in May 2013.

Jane Grushow, Norman Singer Endowment Fund

NARGS Donations Appeal

Donations between May 1 and July 26, 2012 - \$6,285

GENERAL FUND OR UNDESIGNATED

Louisa Ferree (Massachusetts)

Eveleen Henry (Oregon)

Emerald Chapter of NARGS (Oregon)

Daniel Holden Adams (New York)

William "Bill" Brown (New York)

Marna C. Tallman (Oregon)

Jonathan Dean (Ohio)

DESIGNATED

Joan & Bill Schmitt (Pennsylvania): in memory of Flip Miller

NARGS 2013 Awards

Call for Nominations

I would like to receive the new nominations by February 5, 2013 for 2013 Awards. A listing of previous recipients of the awards are on the NARGS web-site.

AWARD OF MERIT is given to persons who have made outstanding contributions to rock and alpine gardening and to NARGS.

In addition, the recipients will be people of demonstrated plantsmanship and an active member of the Society.

MARCEL LE PINIEC AWARD is given to a nursery person, propagator, hybridizer, or plant explorer who is currently actively engaged in extending and enriching the plant material available to rock gardeners.

EDGAR T. WHERRY AWARD is given to a person who has made an outstanding contribution in the dissemination of botanical and/or horticultural information about native North American plants. The recipient does not have to be a member of the Society.

CARLETON R. WORTH AWARD is given to an author of distinguished writings about rock gardening and rock garden plants in a book or in magazine articles. The recipient does not have to be a member of the Society.

MARVIN E. BLACK AWARD is given to a member of the Society who excels at promoting membership in NARGS; organizing study weekends, national, and international meetings. They should also be involved in such activities as planning trips to study plants and to meet other plant people. The emphasis shall be placed on a member who has helped other people to reach their potential in the plant world.

LINC & TIMMY FOSTER MILLSTREAM GARDEN AWARD is for an outstanding contribution to the North American Rock Garden Society for creating a superior garden. Not meant to be a competition, but to recognize members' great gardens across the various styles and regions of the United States and Canada. Meant to reward the creation of private gardens, there are four categories: Container Garden, the Alpine Rock Garden, the Woodland Garden, and the Special Garden.

Any additional questions, concerns, please contact me directly:

Betty Spar, NARGS Awards Committee Chair

<bettyannespar@aol.com

206 Wolfe Street, Alexandria VA 22314

Telephone: (703) 549-0214.

LIFE MEMBERS & PATRONS

The following recently became a NARGS Life Member

Ellen H. Reed (New Mexico)

The following became NARGS Patrons

Louisa Ferree (Massachusetts)

Boyd A. Hutchison (Massachusetts)

Lou Ann Brower (North Carolina)

Minnesota Chapter of NARGS

Bonnie & David Swinford (New York)

Lesia E. von Munkwitz-Smith (Connecticut)

NARGS SPEAKERS TOUR PROGRAM 2012-2013

The Speakers Tour Program is a wonderful service provided by NARGS to its members. It enables chapters, regardless of their size, to secure outstanding speakers at a very nominal cost. The NARGS Speakers Tour Program for 2012 has been completed with Fritz Kummert and Nick Turland as speakers. We thank them for their participation.

There are two speakers being scheduled in 2013:

James Locklear, author of the beautiful new book, "Phlox, A Natural History and Gardener's Guide" will visit NARGS chapters in the West and a few in the East next spring 2013.

Ian Young, noted author, lecturer, and artist from Scotland, will visit primarily eastern chapters in the fall of 2013. Planning for this tour is beginning now.

Program Chairpersons who are interested in securing either speaker for their chapter should contact the STP Chairperson, Barbara Wetzel: at <aparkplace@aol.com>. For complete bio of the speakers, visit the NARGS Web site: www.nargs.org and click on "Speakers Tour." Your comments and suggestions regarding the Speakers Tour Program are welcome.

Barbara Wetzel
<aparkplace@aol.com>

ANNOUNCEMENT: The Book Review Committee, chaired by Betty Anne Spar, is looking for reviewers for the website. One or two reviews per year. Even you can do one. Contact me at <bettyannespar@aol.com> if you are interested.

We have learned of the death of the following NARGS members

Ellie Brinkerhoff Spingarn, Connecticut

Ken Lodewick, Eugene, Oregon

Robert McKinney, Sammamish, Washington

WELCOME TO OUR NEW MEMBERS WHO JOINED BETWEEN MAY 1 AND JULY 26, 2012

Anderson, Herb & Amy Paterson, 7840 S. Wellington St., Centennial, CO 80122
Bierer, Elizabeth, 5 Follen St., Cambridge, MA 01238
Boughen, Barbara, 6200 Marshall Rd., Dexter, MI 48130
Ellenberger, Cheri, 154 Port Rd., Kennebunk, ME 04043
Feher, Cynthia, 1917 Runnymede Ave., Victoria, BC V8S 2V3, Canada
Gaines, Russell, 3200 SW 72nd St., Oklahoma City, OK 73159
Levy, Ginny, 715 Folly Hill Rd., Kennett Square, PA 19384
Ly, Tienna, 77 Woodfern Dr., Toronto, ON M1K 1L4, Canada
Miyake, Anthony, 160 Burnett Ave., Maplewood, NJ 07040
Moore, James, POB 967, Gig Harbor, WA 98335
Newman, Ann, 219 S. Buchanan Ave., Louisville, CO 80027
Portman, Elizabeth, 49 Queens Rd., Sackville, NB E4L 4G8, Canada
Rodman, Susan, 584 Preston Main Rd., Ulverston, Tasmania 7315, Australia
Santa Fe Botanical Garden, POB 23343, Santa Fe, NM 87502
Schafler, Scott, 10 Gracie Sq., #11 E, New York, NY 10028
Sharp, Davie & Maggie, "Kincaig," 4 Walkers Crescent, Lhanbryde
Moray IV30 8PB, Scotland, United Kingdom
Steffen, Richie, 1825 S. 296th St., Federal Way, WA 98003
Tolzmann, Paul & Janet, 220 Cutacross Rd., Golden Valley, MN 55422
Tribby, Mariel, 58 Red Lion Row, Kennett Square, PA 19348
van Dijk, Jerry, Majoraan 14, Dronten BA 8252, Netherlands
Vandeloise, Serge, Rue Croisette 13, Baisy-Thy 1470, Belgium
Whittier-Liu, Lindsay, 14 Indian Hill, Florence, MA 01062
Wiebusch, Harold, 115 Hanover Place, Cary, NC 27511
Yeagle, William, 7340 Hillside Way, Anchorage, AK 99516

Potomac Valley Chapter Service Award Bobbie Lively-Diebold

Bobbie Diebold has been a member of Potomac Valley Chapter since 1990 and a member of NARGS for 22 years. During that time she has served in many positions on the Board, hosted the picnic numerous times, but she is being nominated for propagating and providing plants for our yearly plant sale.

Bobbie also serves as our technical advisor at our sales. Bobbie's horticultural knowledge is superior and her recall even better. No one is more exuberant with her descriptions. To hear Bobbie describe a plant is like a poem, with all of us eavesdropping. No one does it better. When she is finished with her performance, all of us grab the plant being described, even if we already own it!

She has introduced all of us to varieties of Louisiana Iris, Primula, hellebores, Asian delicacies, and woody ornamentals. It's fair to say that Bobbie has provided the chapter with over 5,000 plants (mostly in pints and quarts) for over 20 years and deserves to be recognized.

We recognize Bobbie: "For introducing and providing us for over 22 years with an unlimited supply of choice plants for the PVC's annual plant sale and for educating the public in the value of growing something truly beautiful." *Betty Anne Spar.*

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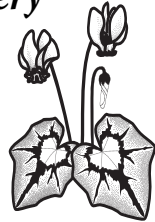
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'Nelson and Marlborough Mountainlands – a treasure trove of Alpine Plants'

Doug Logan

One of our own Local Members sharing his passion for
'Snakes and Dragons in the Garden'

- o **Ian Young** (*in absentia!*) - a new DVD entitled 'Unprotected – Bulbs in the Garden'
- o **Workshop Programme** to include Plant Photography Harry's Way (Harry Jans), Maintenance of a Bulb Collection (Rannveig Wallis) and Back-to-Basics Seeds and Propagation (Joe Cartman)
- o **Specialist Plant Sales** – not to be missed!
- o Garden visit to **Broadfields New Zealand Landscape Garden** (optional to the Workshops)
- o **Field Trip to the Craigieburn Skifield** on the Monday (subject to confirmation and weather!)

Further information available very soon on our website **www.nzags.com**
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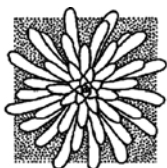


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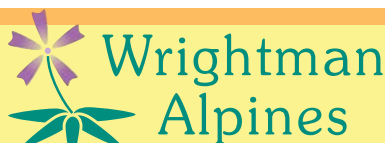
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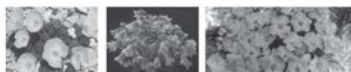
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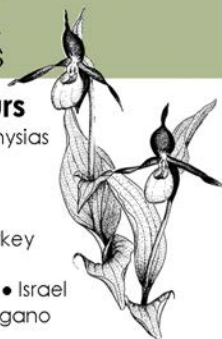
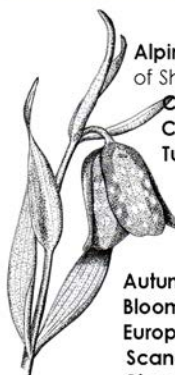
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The 2013 NARGS Annual Meeting will be held in Asheville, North Carolina, and will explore the flora of the Blue Ridge in the Southern Appalachians. The conference begins on Thursday, May 2, and concludes on Saturday evening, May 4. On May 3 and 4, field trips will take participants to view the flora of the region. A guide who is familiar with the area will lead each tour group, consisting generally of 11 to 14 people. Visits on your own to private gardens are scheduled for Sunday, May 5.

Additional activities include a guided tour of the gardens at the Biltmore Estate on the morning of May 2 and a two-day post-conference tour of the Blue Ridge north of Asheville on May 6-7. *These additional activities are not included in the registration for the meeting.* A complete description of all activities and an on-line registration form are available at www.nargs2013.org.

Field Trips

Field Trip 1: Southern Highlands Reserve and Coontree Trail

The Southern Highlands Reserve is a private garden and research center dedicated to the preservation, cultivation, and display of plants native to the Southern Appalachian Highlands. The Reserve replicates many of the plant communities typically found in the higher elevations. The tour also includes a visit to Coontree Trail that goes through rhododendron thickets, deciduous and evergreen woodlands, and along a stream. *Hike difficulty is moderate.*

Field Trip 2: Panthertown Valley, "Yosemite of the East"

Panthertown is known for its scenic beauty and biological diversity. The area includes granitic balds, blackwater tributaries, waterfalls, and alpine meadows in an array of habitats. *This is a strenuous trip due to uneven trails, steep terrain, and distance.*

Field Trip 3: Alpine Ericaceae

Set among balds and boreal forest surrounding the Graveyard Fields, this tour will observe five ericaceous genera rarely seen at elevations below 5,000 feet. The tour will also visit the "vertical bog" at Wolf Mountain Overlook. *This hike is rated as strenuous due to uneven trails, steep terrain, and distance.*

Field Trip 4: Graveyard Fields to Devil's Courthouse to Wolf Mt. Overlook

The trip includes a birch-sedge escarpment with giant ferns and drops through a beech gap into a "rhododendron hell" at Graveyard Fields and fire-maintained bogs. At Devil's Courthouse are alpine species that may be remnants from the last glacial period. The tour also visits the "vertical bog" at Wolf Mountain Overlook. *Hike difficulty is moderate.*

Field Trip 5: DuPont State Forest - Hooker Falls to High Falls

This tour visits DuPont State Forest to see rhododendrons, *Hexastylis contracta*, and numerous violas, as well as Hooker Falls and Triple Falls on the Little River. *This hike is rated as moderate.*

Field Trip 6: DuPont State Forest - Cedar Rock Mountain & Hooker Falls

Also in DuPont State Forest, this tour goes to Cedar Rock Mountain, the largest outcrop of exposed granite in the region. Hundreds of acres alternate between bare rock, moss, and lichen-covered rock. *Hike difficulty is moderate.*

Field Trip 7: Fryingpan Mountain to N.C. Arboretum

This tour travels to Blue Ridge Parkway for a hike to an old fire tower on Fryingpan Mountain and to Big Bald, a great wildflower area. We will go to the Pisgah Inn for lunch and a panoramic view of the Blue Ridge. After lunch, the tour goes to the North Carolina Arboretum, where there is a fine collection of bonsai. *Hike difficulty is rated as easy.*

Other Activities

Speakers and Meals

Registration fee includes an evening reception and speaker on May 2, 3, and 4, plus lunch and dinner on May 3 and 4. The presentations each evening are:

Thursday, May 2 - *Geology of the Southern Appalachians*

James Reynolds III, Associate Professor of Geology at Brevard College

Friday, May 3 - *Wildflowers of the Blue Ridge*

Timothy Spira, Professor of Biological Sciences at Clemson University and author of "Wildflowers and Plant Communities of the Southern Appalachians and the Piedmont."

Saturday, May 4 - *The Southern Blue Ridge: Crucible of Life*

Patrick McMillan, Curator of the Campbell Museum of Natural History at Clemson University and Host of "Expeditions" TV show produced by South Carolina Public Television

Vendor Sales

The conference will also provide the opportunity to purchase plants, troughs, books, and garden art. See the website for details.

Post-Conference Tour

On May 6 and 7, Dr. Larry Mellichamp will lead an overnight trip to botanize along the Blue Ridge Parkway from Asheville to Banner Elk, NC. The tour is limited to 27 participants.

Meeting Location and Accommodations

The host hotel is the Doubletree Biltmore Inn. Rooms are available at special NARGS group rates of \$120/night at the Doubletree (828-274-1800) and \$85/night at the adjacent Sleep Inn (828 277-1800).



Registration

The Conference fee includes all programs, transportation and lunch on Friday and Saturday tours, reception hors d'oeuvres each evening, Friday evening buffet, and Saturday evening banquet. The Biltmore garden tour and post-conference trip to botanize along the Blue Ridge Parkway are additional.

Contact for further information:

David White, 919-306-1786, or email at administrator@nargs2013.org



Registration Form

The preferred method for registration is via the Registration form on the website (www.nargs2013.org). If you do not have computer access, fill out this form and mail it along with a check to the Conference Registrar: Bobby Wilder, 2317 Elmsford Way, Raleigh, NC 27608. Make check payable to "NARGS – Piedmont Chapter".

To register for the conference, you must be a member of NARGS national. If more than one person is registering for the conference from the same household, please complete a registration form for each member or guest (for dinners and evening programs).

Name of Member or Guest: _____

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Tour Choices: (enter top four choices for tours described on pp. 1 and 2):

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Meal Choices (put an X in the box corresponding to your meal choice):

Friday Lunch: Beef Turkey Vegetarian

Saturday Lunch: Beef Turkey Vegetarian

Friday Buffet: Roasted Chicken Pasta Primavera (Vegetarian)

Saturday Plated Dinner: Chicken Breast Beef Salmon Vegetable Napoleon

Registration Fees (enter amount in spaces to right side of item)

Registration (by March 2, 2013 - \$300/person; after March 2 - \$325/person) _____

1 year NARGS membership (if not already a member - \$30/household) _____

Biltmore Estate Day Pass (can be used any day but Saturday - \$49/person) _____

Biltmore Guided Garden Tour on May 2 (\$20/person)* _____

Guest: Friday buffet and evening program (\$35/person) _____

Guest: Saturday banquet and evening program (\$40/person) _____

Post-Conference Trip on May 6-7 (\$325/person double occupancy, \$365/person single occupancy. Includes transportation, lodging in Banner Elk, lunch and refreshments.) _____

* Requires Day or Annual Pass to enter Biltmore Estate Total _____

Conference registration cancellations prior to March 2, 2013 will incur a \$25 processing fee. There will be no refunds after that date.

NARGS 2013 Annual General Meeting



Asheville, North Carolina
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NARGS 2013 ELECTION TIMETABLE UPDATE

In the last issue of the Quarterly (page 250) there was a call for nominations for the 2013 election of Officers and Directors. These initial nominations were submitted by September 1.

This election will, for the first time, enable NARGS members to vote by email. This will open up the process so that all members have a full opportunity to participate.

The timetable for the election is outlined below. **Details of the voting process will be published in the Winter 2012/2013 Quarterly.**

Timetable from October

October 15, 2012 – Nominating Committee will post the slate of candidates recommended by them on the NARGS website. There will then be an opportunity for candidates "from the floor" to come forward.

Nominations for from-the-floor candidates should be submitted by November 1 with documentation (bio, picture & letter agreeing to run) by email to <llhorwitz@gmail.com> or posted to Lola Horwitz, 446 6th St., Brooklyn, NY 11215 USA.

The combined list (of recommended slate, and from-the floor nominations) will be published in the Winter 2012/2013 issue of the Quarterly (dispatched late December 2012). A detailed description of the voting process will also be published in that issue.

February 1-15, 2013 – Election.

February 22, 2013 – Announcement of Preliminary Election Results (on the website and in the Spring 2013 Quarterly), and if necessary, arrangements for Runoff Elections in cases where the required majority is not achieved.

Third week in March, 2013 – Quarterly dispatched.

April 22-29, 2013 – Runoff Election, if required.

May 2, 2013 – Certification of Election Results.

NARGS CHAPTERS (meeting place/area) & CHAIRPERSONS _____

Adirondack (Ithaca, NY)	Carol Eichler - carolithaca@gmail.com
Alaska (Anchorage & Mat-Su Valley)	Carmel Tysver - garden@gci.net
Allegheny (Pittsburgh, PA)	Albert Deurbrouck - adeurbrouck@verizon.net
Berkshire (Stockbridge, MA)	Erica Schumacher - ejnovick@yahoo.com
Calgary Rock & Alpine Garden Society (Calgary, AB)	Cathy Kurio - cakurio@shaw.ca
Columbia-Willamette (Portland, OR)	Jan Jeddeloh - janjeddeloh@gmail.com
Connecticut (New Haven, CT)	Virginia Gingras - ginnygingras@netzero.net
Delaware Valley (Philadelphia, PA)	Tammy Harkness - plant_nerd@msn.com
Fells (Newbury, NH)	Thelma Hewitt - Tkewitt@aol.com
Gateway (St. Louis, MO)	Bruce Buehrig - buehrig31@aol.com
Genesee Valley (Rochester, NY)	Betsy Knapp - eeknapp@rochester.rr.com
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Hudson Valley (Westchester Co, NY)	Don Dembowski - dondembowski@optonline.net
Long Island (Oyster Bay, NY)	Donald Ohl - donohl@yahoo.com
Manhattan (New York, NY)	Michael A. Riley - ManhattanNARGS@verizon.net
Mason-Dixon (Norrisville, MD)	Joan King - jsking11@juno.com
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New England (Waltham/Boylston, MA)	Mike Saganich - ceruleanprism@yahoo.com
Newfoundland (St. John's, NL)	Todd Boland - todd.boland@warp.nfld.net
New Mexico (Santa Fe/Albuquerque)	Jean Warner - jean@cybercomp.net
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Nova Scotia (Halifax & Truro, NS)	Darwin Carr - dcarr@nsac.ca
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Ottawa Valley (Ottawa, ON)	Judy Wall - jpwall@ripnet.com
Painted Hills (John Day, OR)	Gail Klodzinski - gailkathryn3@hotmail.com
Piedmont (Raleigh, NC)	David White - dmwhite_nc@yahoo.com
Pikes Peak (Colorado Springs, CO)	Leslie Flanigan - leslie@oldstage.us
Potomac Valley (Alexandria, VA)	Richard "Dick" Hammerschlag - peachnfrog66@comcast.com
Quebec (Montreal, QC)	Robert LeClerc - leclercr@bell.net
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Sierra (Sonora, CA)	Dianne Szymanski - dgszymanski@gmail.com
Siskiyou (Medford, OR)	Lillian Maksymowicz - lillian@jeffnet.com
Southern Appalachian (Asheville, NC)	Mary Lou Kemp - mlbkemp@bellsouth.net
Wasatch (Salt Lake City, UT)	Tony Stireman - tonystireman@msn.com
Watnong (Far Hills, NJ)	Ying Huang - yh2.2005@gmail.com
Western (San Francisco Bay area, CA)	Ted Kipping - tkippingsprint@earthlink.net
Wisconsin-Illinois (Madison-Chicago)	Dave Collura - jdsongraham@aol.com

NARGS STRUCTURE _____

The officers of the North American Rock Garden Society consist of a president, a vice-president, a recording secretary, and a treasurer. The officers are elected by the membership.

The Board of Directors of NARGS consists of the four above-named officers, the immediate past president of NARGS, nine elected directors, and the chair of each NARGS chapter. Chapter chairs are required to be NARGS members by NARGS by-laws.

The affairs of NARGS are administered by an Administrative Committee (called AdCom) consisting of the president, vice-president, recording secretary, treasurer, and one director-at-large, selected annually by the NARGS officers from among the nine elected directors.

OFFICERS _____

President	Peter George, petergeorge@verizon.net PO Box 833, Petersham, MA 01366
Vice President	Harvey Wrightman, wrightman@golden.net RR#3, 1503 Napperton Dr., Kerwood, ON NOM 2B0
Recording Secretary	Ben Burr, bnfburr@verizon.net PO Box 549, Bellport, NY 11713
Treasurer	Bill Adams, 330 Carlile Ave., Pueblo, CO 81004-1054
Director-at-Large	Betty Anne Spar, 206 Wolfe St., Alexandria, VA 22314
Immediate Past President	Grazyna Grauer, Dublin, OH

DIRECTORS OF THE BOARD _____

2010–2013	Jane Grushow, Lancaster, PA Philip MacDougall, Surrey, BC Anne Spiegel, Wappinger Falls, NY
2011–2014	Lola Lloyd Horwitz, Brooklyn, NY Janet Novak, Philadelphia, PA Betty Spar, Alexandria, VA
2012–2015	Jan Jeddelloh, Portland, OR Matt Mattus, Worcester, MA Gwen Moore, Lakewood, CO

MANAGERS _____

Executive Secretary	Bobby J. Ward (919) 781-3291 PO Box 18604, Raleigh, NC 27619-8604 nargs@nc.rr.com
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Back cover: *Astragalus purshii* var. *lectulus* - John Weiser



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