

# ROCK GARDEN *Quarterly*



Volume 59 Number 1

Winter 2001

COVER: *Pulsatilla occidentalis* above Crater Lake, Oregon  
Serigraph by Sue Allen, Brightwood, Oregon

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# ROCK GARDEN

## *Quarterly*

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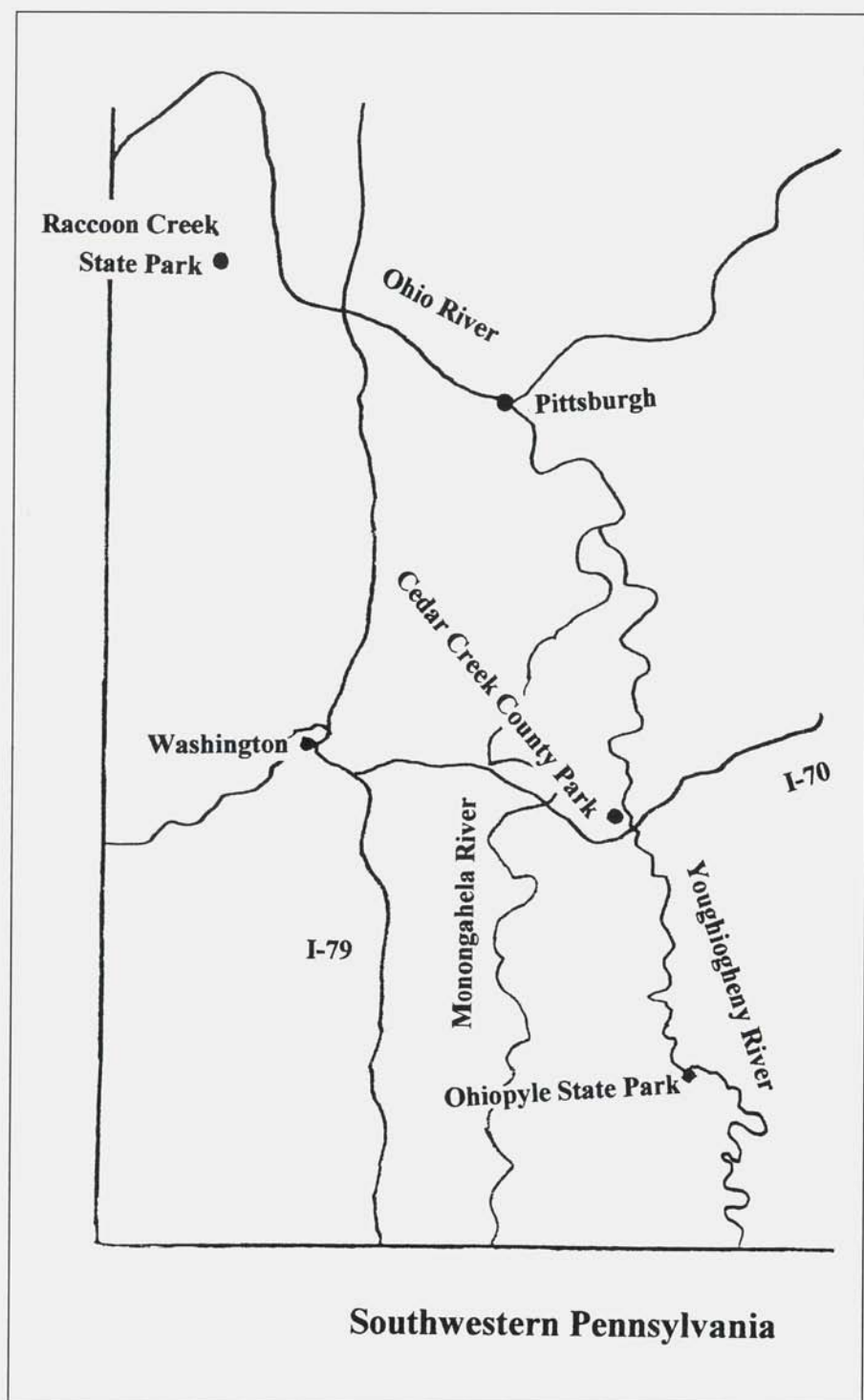
BULLETIN OF THE NORTH AMERICAN ROCK GARDEN SOCIETY

Volume 59 Number 1      Winter 2001

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# Western Pennsylvania

## *A Confluence of Flora*

Martha H. Oliver

When visiting a spectacular natural area, the plant enthusiast rarely asks, “Why are these plants here?” Their beauty is enough. But knowing something about what brought a particular combination of plants to live together can offer insights about reproducing suitable conditions in the garden; thus, the flora and fauna of any area present a unified whole to the thoughtful ecologist—and gardener. Why do plants grow where they do?

The Appalachian province has risen and sunk many times. Each time the area was above sea level, coal forests grew (tree ferns, club mosses and horsetails), died, and decayed into acid peat which eventually was compressed into coal. Inundation by shallow water left shale and sandstone deposits, and each time the land was below sea level, floods of seawater left the shells of marine organisms, which produced limestone deposits.

Later, the Appalachian Mountains rose perhaps as high as 40,000 feet; their worn-down stumps today resemble a layer cake of rock strata. This process of plates rising and sinking is still going on, but very slowly: the Rockies and Tetons are rising, western Wales is rising (Harlech Castle, built at the seaside around 1200 A.D., is now several miles from the shore), and Venice is sinking.

Thus, these complex mountains have layers of rock producing both acid and limestone soils, and plants are found together, often within a few feet of each other, that demand different soil types. (Is this why the British seem to think that all trilliums require acid soils? In western Pennsylvania, most are found on neutral soils, but often near acid-loving plants. Whenever I see *Trillium grandiflorum* struggling in a peat bed in England, I wish I could dump some ground limestone on it.)

At the entrance to the Great Gorge Trail at Ohiopyle State Park, an acid bank is covered with *Gaultheria procumbens* (teaberry), *Rhododendron maximum*, *Kalmia latifolia* (mountain laurel), *Viola rotundifolia* (round-leaved violet), *V. hastata* (halberd-leaved violet), *Mitchella repens* (partridgeberry), *Thelypteris novaeboracensis* (New York fern), *Dennstaedia punctiloba* (hay-scented fern), *Dryopteris marginalis* (marginal shield fern), and mosses. As soon as you round the first bend in the trail, however, erosion has revealed the surface limestone rock; the soil pH rises, and the plants now include *Trillium grandiflorum* (white trillium), *T. erectum* (red trillium), *Tiarella cordifolia* (foamflower), *Phlox divaricata* (wild blue phlox), *Smilacina racemosa* (false

Solomon's seal), *Caulophyllum thalictroides* (blue cohosh), *Hepatica acutiloba* (sharp-lobed hepatica), *Polystichum acrostichoides* (Christmas fern), *Deparia acrostichoides* (silvery glade fern), *Diplazium pycnocarpon* (narrow-leaved spleenwort), *Uvularia grandiflora* (merrybells), *Asarum canadense* (wild ginger), *Actaea pachypoda* (baneberry), *Viola pennsylvanica* (smooth yellow violet), and three *Dentaria* species—*D. diphylla*, *D. laciniata*, and *D. heterophylla* (toothworts). It would be very confusing if you didn't know what was going on under your feet.

The orientation of the mountains, north and south, had a strong effect on the flora of this richly endowed area. Retreating in the valleys before the glaciers—which came south only as far as central Pennsylvania—the plants rapidly recolonized glaciated areas after the ice melted. By contrast, the Alps of Europe, running east and west, were a barrier to plant escape as well as to glacial advance, and when the glaciers retreated, there were no pockets of survivors to recolonize the wasteland.

The southeastern U.S. forest flora thus survived for eons, growing ever richer. Many plant groups had time to evolve into arrays of species, creating wonderful diversity. The flora most similar to that of the Southeast is found in eastern Asia, where there are “cousins” of many America genera: *Trillium*, *Arisaema*, *Rhododendron*, *Magnolia*, *Styrax*, *Liriodendron*, *Lindera*, *Asarum*, *Meehania*, *Podophyllum*, *Pachysandra*, and *Astilbe*. Climate change isolated these two areas, which once were part of a huge temperate band stretching around the world; *Ginkgo* and *Metasequoia* (dawn redwood) are two genera that failed to survive in the New World.

In isolation, these plant groups evolved separately, but many of them are still close enough genetically to interbreed. A cross between the native *Stylophorum diphyllum* (wood poppy) and the Asian *S. lasiocarpum* resulted in a huge hybrid which resembles *Paeonia mlokosewitschii* and blooms all summer, but it produces no seed and has not been successfully divided or tissue-cultured.

Moving in to focus on the area to be visited during the 2001 Annual Meeting in Pittsburgh, we will have four field trips to areas watered by north-flowing rivers. The Youghiogheny River (pronounced “yawk-ah-génny,” with a hard “g”), flowing north out of West Virginia to join the Monongahela at McKeesport, Pennsylvania, carries a number of southern species through the mountain barrier, with the result that Ohiopyle State Park and Cedar Creek County Park are the northernmost stations for many plants. The pawpaw, *Asimina triloba*, a curious “tropical” fruit tree, finds its way north along both these rivers, as do *Magnolia tripetala* (umbrella tree) and *Oxydendrum arboreum* (sourwood). *Marshallia grandiflora* (Barbara's buttons), a splendid rock garden perennial, is on the Pennsylvania Wild Plant Conservation Act list of threatened species but is more common south of the Mason-Dixon Line. Other southern species at the northern edge of their range here are *Iris cristata* (crested iris), *Aconitum uncinatum* (wild monkshood), *Cimicifuga americana* (snake-root), *Trautvetteria caroliniensis* (false bugbane), and the two native larkspurs—*Delphinium tricorne* and *D. exaltatum*. Additional species at the northern edge of their ranges but not brought by rivers include *Sedum telephioides* (shale barrens sedum), *Chrysogonum virginianum* (green and gold), *Dicentra eximia* (fern-leaf bleeding-heart), and others mentioned in my article on plants of the Shale Barrens in the Fall 2000 issue of this journal.

This area is also close to the southern edge for some northern species, which makes it one of the “suture zones” of great interest to botanists. *Trillium undulatum*, the elusive painted trillium, is a northern species that manages to survive quite far south on mountaintops, but not in the lowlands. *T. cernuum* (nodding trillium), common in New England, and *Streptopus roseus* (twisted stalk) fall into this group, as does *Woodsia ilvensis* (rusty woodsia fern). If this diversity is not sufficient already, the same area is the eastern edge of the range for some midwestern genera, such as *Quercus imbricaria* (shingle oak), *Stylophorum diphyllum* (wood poppy), *Erythronium albidum* (white fawn-lily), *Trillium nivale* (snow trillium), and *T. sessile* (toadshade).

Botanists find that plants at the extremes of their range are more likely to succumb to environmental stress, but they are also more likely to evolve quickly in response to changing conditions. Thus, the instability of these areas also provides opportunities to move into new niches or even to evolve into new species.

Habitat diversity in this area is thus explained by the multiple rock and soil types, the orientation of the mountains, the direction of the rivers, the age and stability of the ecosystems, and the climate. Temperate and mild (USDA Zone 6), with annual rainfall between 30 and 45 inches (850–1000 mm), this climate makes many plants happy. Winter lows rarely drop below  $-10^{\circ}\text{F}$  ( $-24^{\circ}\text{C}$ ), and summer highs only occasionally rise above  $90^{\circ}\text{F}$  ( $35^{\circ}\text{C}$ ). This is a place where life is good, on the whole. In fact, there are more different kinds of plants in the eastern mixed mesophytic forest than in any other temperate ecosystem except that of eastern Asia.

What does all this mean for gardeners? Whatever your soil type, there are plants for your garden here. And the many North American gardeners who live in Zone 6 east of the Rockies are also working with similar climatic conditions. Those who attend the April 2001 NARGS national meeting will have the opportunity to see almost all the plants mentioned in this article.

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Martha Oliver operates The Primrose Path, a mail-order nursery, with her husband, Charles Oliver, and has enjoyed the wild plants and gardens of western Pennsylvania since childhood. Her e-mail address is <primrose@alusa.net>.



*Chamaecyparis pisifera* 'Tsukumo'  
(drawing by Baldassare Mineo)



# *Chamaecyparis* for the Rock Garden

Todd Boland

The ideal rockery should provide year-round interest. For gardeners who experience true winters, keeping the rock garden attractive through the cold months can be a challenge. Many rockeries in the Northeast are at their peak in late spring with blooming *Saxifraga*, *Arabis*, *Aubrieta*, *Phlox*, *Primula*, and spring bulbs. In early summer we have *Campanula*, *Penstemon*, *Geranium* and *Dianthus*, and in late summer through fall primarily the fall *Aster* and *Gentiana* species. But what can provide beauty from November to late March? The ideal choice is dwarf, evergreen conifers.

No rock garden is complete without at least a few dwarf conifers. They provide the skeleton of the landscape—a sense of stability. While many alpine may come and go, whether because of their naturally short lives or our changing desires, the conifers in a rock garden are usually more permanent residents. Fortunately, nature has seen fit to create numerous aberrant forms of many common conifers. Horticulturists have taken advantage of these mutations, propagating them and making them available as new cultivars. As it happens, many of these cultivars are dwarfs, ideal for the rock garden setting.

Although there are many different species of conifers that have produced dwarf forms, no genus appears to exhibit such a wide range of sizes, shapes, forms, and colors as *Chamaecyparis*, commonly called false cypress. There are only five commonly grown species of *Chamaecyparis*. The so-called white cedar, *C. thyoides*, is native to boggy areas in the eastern United States and is the most wet-tolerant of the genus. In the Pacific Northwest there are two species, the Nootka false cypress, *C. nootkatensis*, and Lawson's false cypress, *C. lawsoniana*. Both of these trees prefer cool, moist climates. From Japan come the Hinoki false cypress, *C. obtusa*, and the Sawara false cypress, *C. pisifera*; both tolerate warmer, drier conditions. There is another uncommon and less hardy species, *C. formosensis* from Taiwan. All these species become tall, conical trees to 60 feet (20 m) or more in height, but there are innumerable smaller cultivars.

False cypresses are relatively trouble-free. They do best in rich, moist, but well-drained soil that is on the acidic side. Shallow, alkaline soil produces very slow growth. Full sun is best, but they can tolerate part shade. They generally dislike open, windy sites, where they may suffer severe winter burn, but the dwarf cultivars



are small enough that winter protection is rather simple; a teepee of evergreen boughs or sticks covered in burlap is all the protection they require. If you are using burlap, it is best not to allow it to rub against the foliage. These plants are easy to transplant, even as small specimen trees.

In regions where winters are not too cold and quite wet, such as the Pacific Northwest, *Phytophthora* root rot, carried by ground water, attacks some *Chamaecyparis* cultivars, while others seem to be resistant. Another problem in milder climates is fungal disease of the foliage, which causes “burnout” especially in the more compact dwarf forms. Bill Janssen of Collector’s Nursery in Washington state recommends spraying with tribasic copper in winter to prevent such damage and reports that *C. obtusa* cultivars seem to suffer the most. In the U.S. Southeast, hot, humid summer weather is conducive to fungal attack, especially on cultivars of *C. obtusa* and *C. pisifera*.

Unfortunately, false cypresses are not hardy enough for the central plains states and the prairie provinces. The hardiest are *C. nootkatensis* and *C. thyoides*, both rated for USDA zone 4 (average winter minimum,  $-30^{\circ}\text{F}$ ). The Japanese *C. obtusa* and *C. pisifera* are rated to zone 5 ( $-20^{\circ}\text{F}$ ), and *C. lawsoniana* only to zone 6 ( $-10^{\circ}\text{F}$ ). Essentially, the Pacific Northwest has the ideal climate for them, followed by the New England states and coastal eastern Canada. My garden is in St. John’s, Newfoundland, on the Atlantic coast of Canada, in USDA zone 6 with an average winter temperature of about  $-3^{\circ}\text{C}$  ( $28^{\circ}\text{F}$ ) and average summer temperature of  $20^{\circ}\text{C}$  ( $68^{\circ}\text{F}$ ). The coldest I’ve recorded here is  $-21^{\circ}\text{C}$  ( $-5^{\circ}\text{F}$ ).

Finally, they—like most conifers—need ample space. They dislike having close neighbors; other plants rubbing against them cause thinning or death of the branches on the affected side. In bun-forming plants, such damage can ruin their looks entirely.

Despite the fact that there are only five commonly cultivated *Chamaecyparis*, there are probably more cultivars derived from this genus than from any other conifer genus. There are more than 500 known cultivars of *Chamaecyparis*, and nearly half of these are listed as dwarf, but the term “dwarf” is relative. For example, *C. obtusa* ‘Nana Gracilis’ is often considered a dwarf, but when mature, it can reach 7–10 feet (2.5–3 m)—dwarf compared to the typical species, but still much too large for most rock gardens. The following cultivar descriptions are of plants that are dwarf enough for this use; they are all plants I have grown myself or seen in the gardens of friends in Newfoundland or Nova Scotia. (Note that the photographs illustrating this article are mostly of young plants; the foliage of some cultivars changes in texture as the plant ages.)

Dwarf cultivars of *C. lawsoniana* are rather uncommon, and only a few are readily available. You may encounter these:

‘Gimbornii’, a slow-growing, globe-shaped cultivar with blue-green foliage. It may reach 5 feet (1.5 m), but this will take many years. Perhaps best for the large rockery.

‘Minima’, slow-growing, light green, globose in outline with fan-like foliage. ‘Minima Aurea’ is a bright gold version, and ‘Minima Glauca’ is blue-gray.

‘Pygmaea’, sometimes called ‘Pygmy’, is a super-dwarf, very slow-growing cultivar that forms a tight, dark green bun. One of my favorites.

'Pygmaea Argentea', a dense, globose dwarf with bluish-green foliage tipped in white, a lovely effect.

There are few cultivars of *C. nootkatensis*, and even fewer dwarf forms. I have only come across two dwarfs, 'Compacta' and 'Compacta Glauca'. Both are globose to conical in outline with dense, upright branches. The former has light blue-green foliage curiously marked here and there with creamy white. The latter is deeper blue-green. Both may get relatively large over time and are best suited to large rock gardens.

There are so many dwarf cultivars of *C. obtusa* available that those I describe here are just the tip of the iceberg:

'Chabo-yadori', globose when young, becoming more pyramidal with age. Branches are slightly twisted and bear a combination of plumelike and fanlike light green foliage. Quite different.

'Hage', very dwarf, globose, with dense, dark green foliage.

'Juniperoides' forms a very dwarf ball with dense, juniperlike foliage that is deep green.

'Kosteri', a very popular dwarf with interesting foliage that is twisted, with drooping tips. The new foliage is bright green, while the older is deep green, creating a pleasing contrast. This cultivar is somewhat globe-shaped.

'Lycopodioides' is another one grown for its unusual form. The branches are upright but irregular in height, creating a cockscomb impression. Foliage is blue-green.

'Mariesii' has wonderful, feathery foliage that is variegated with creamy white. The plant is very slow-growing and forms an open globe. It may reach 4 feet (1.2 m) after many years.

'Northwind' is a tight, ball-shaped super-dwarf with mid-green foliage, small enough to use in a trough.

'Nana' is very similar to 'Kosteri' but even more dwarf: after 40 years, this cultivar will still be under 30 inches (0.75 m).

'Nana Aurea' is a wonderful dwarf with twisted, fanlike golden foliage. Rounded when young, it becomes more pyramidal when mature. It is often considered the best dwarf golden conifer for a rock garden.

'Pygmaea', low and globe-shaped, has mid-green foliage with conspicuous orange-red stems.

'Pygmaea Aurescens' is a low spreader with foliage similar to that of 'Pygmaea' but turning bronze in winter.

'Sunspray' is very similar to 'Nana Aurea' but its foliage is more yellow than gold and turns somewhat orange in winter, a nice effect.

'Tiny Tot', a very small bun of medium green; like 'Northwind', it's ideal for a trough.

Dwarf cultivars of *C. pisifera* are just as numerous as those of *C. obtusa*, but there is more variation in the foliage, which may be fanlike, prickly or plumelike. Some cultivars I can recommend are the following:

'Boulevard', not strictly a dwarf since plants can reach almost 10 feet (3 m) in time, but so beautiful I want to include it. The plant has a compact, conical form, and the soft foliage is a lovely steel-blue in summer and turns purplish in winter. Over all, a stunning semi-dwarf conifer suitable for foundation planting or a large rockery.

'Compacta' forms a low, compact bun of deep green; the fanlike foliage has conspicuously down-curved tips.

'Compacta Variegata' is similar to 'Compacta', but the foliage has creamy white flecks scattered throughout. If purchased small, both 'Compacta' and 'Compacta Variegata' could live their first 10 years or more in a trough before becoming too large.

'Dwarf Blue' is highly recommended for its low, rounded growth habit and blue-gray, soft yet somewhat prickly foliage; it is quite stunning.

'Mikko', also highly recommended, is low, dense, and globose, with prickly gray-green foliage tipped in white. This cultivar is more sensitive to cold winds than most.

'Minima' is very dwarf, with a bun shape and bright green, wavy, fanlike foliage.

'Minima Aurea' is similar, with golden tips.

'Nana Aureovariegata' forms a dwarf, flat-topped globe of gold-tinted foliage. Some branches may revert to green and should be removed immediately.

'Plumosa Aurea Compacta' is a wonderful plant for winter color and texture. This cultivar has an upright, globose habit and soft, feathery golden foliage that turns brilliant yellow-green in winter. 'Plumosa Aurea Compressa' is quite similar. Both can get relatively large in time, so they are best planted in the larger rock garden.

'Snow' is like an upright, ball-shaped 'Mikko' with similar blue-gray foliage tipped in white. Protect it from cold winds.

'Squarrosa Intermedia', left to its own devices, can get too large for the typical rockery, but it is often sold as a clipped plant, and if pruned annually it will stay small, tight and globe-shaped. The foliage is very similar to that of 'Dwarf Blue'.

'Sungold' has interesting weeping, threadlike, yellow foliage on a somewhat rounded plant.

'White Pygmy' is a bun-shaped, very dwarf cultivar, green with white tips. Like 'Snow' and 'Mikko', it is extra-sensitive to cold winter winds.

Like the other American species of false cypress, *C. thyoides* has produced relatively few dwarf cultivars. I have seen only two dwarf forms grown locally:

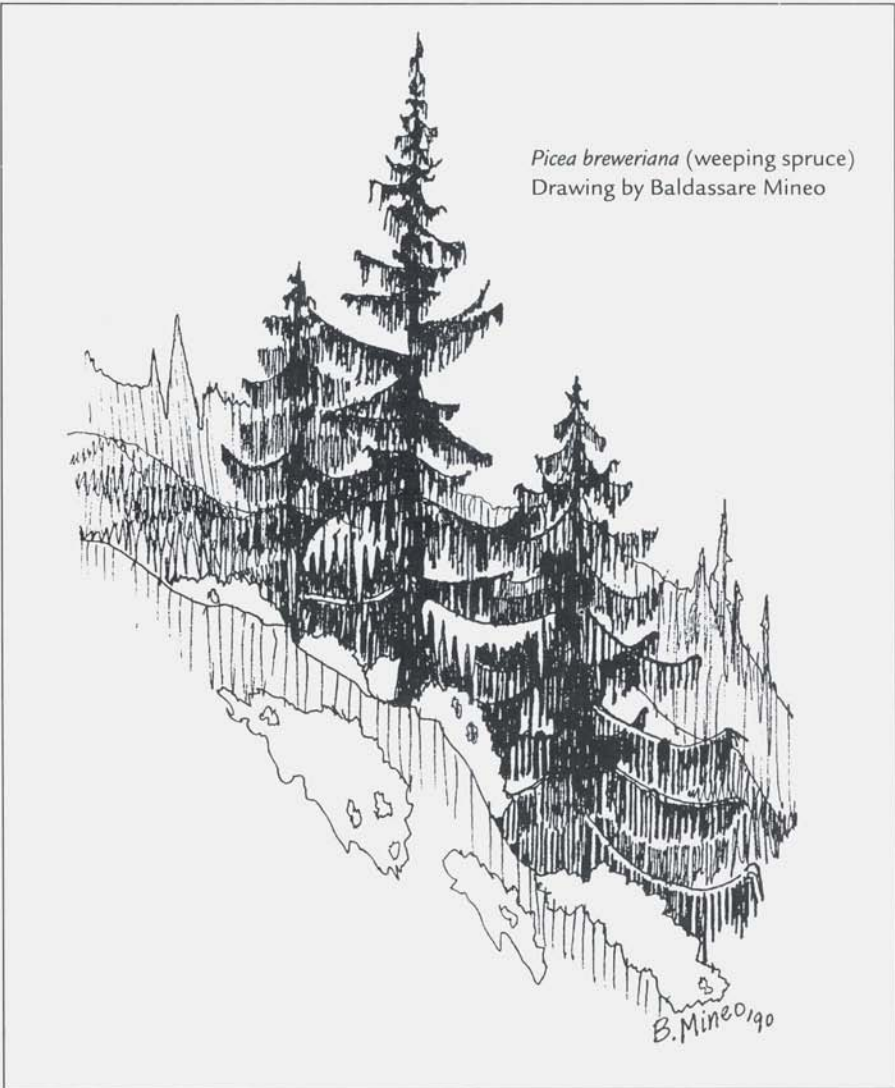
'Meth Dwarf' is somewhat conical in habit, with gray-green foliage. It turns purplish in winter.

'Red Star' has soft, feathery foliage that is blue-green in summer and purplish in winter. The form is irregularly globose.

With their small size and myriad forms, textures, and colors, the dwarf *Chamaecyparis* are highly recommended additions to rock gardens in areas where they can be successfully grown. A collection of the smallest cultivars takes up surprisingly little space. The smallest can even be used in large trough gardens, adding to their

year-round interest. The perennial beauty of the yellow and blue forms really brightens up the dreariest winter day, and even in summer, among the bounty of alpine flowers, they are wonderful foliage contrasts.

Todd Boland is an instructor in general horticulture at a college in St. John's, Newfoundland. He has been working on his present garden for 20 years and is also a dedicated birder. In addition to conifers, he focuses on ericaceous plants. His e-mail address is <tboland@nfld.com>.







*Calceolaria uniflora*

Drawing by Baldassare Mineo



# The Central Peruvian Andes

David Hale

Peru extends from just below the Equator to 17° south latitude. The western half of the country is mountainous, and the eastern part—the Oriente—is tropical rainforest. There is also a narrow strip of coastal desert. The central part of Peru holds some of the most beautiful and awe-inspiring mountains in the more than 4000 miles (5600 km) of the Andean chain. The prevailing winds at this latitude come from the east, so the eastern slopes are wetter and the western slopes gradually drier until one reaches the Pacific coastal desert. The result is a great range of habitats and a vast variety of plant life: about 17,000 different flowering plants and gymnosperms.

When my wife, Donna, and I travel outside the United States—which we do approximately three months of the year—we seek places that provide reasonable comfort and ease of access to plant populations, in settings of natural beauty and cultural interest. Finding the perfect combination is not always easy, but Peru has all these desiderata in abundance.

You could visit Peru for only one of these goals: the cultures, the flowers, or the beautiful mountains and countryside. There is even a “mini-Galapagos” experience on certain offshore islands near the central Peruvian coast. But best of all, you can easily do several or all of these things on a single two- or three-week visit. Around any corner in these mountains, it is possible to see a beautiful flowering plant that has never before been seen by a North American, and perhaps one that has never been introduced into cultivation anywhere.

At this low latitude, only the upper Andean zone at 3500 meters (c. 11,500 feet) and above holds the plants that alpine enthusiasts seek. Even at the foot of the permanent snowfields, the plants seem to be in no hurry to flower and disperse their seed. Some species seem to do this quickly enough, but others take two or three months to ripen seed and do not flower until late in the season.

In Chile to the south, the seasons are more or less the reverse of what we experience in the Northern Hemisphere; in Peru, however, the seasonal cycle is quite complex. But since I am dealing here with only a narrow section of the country, I can simplify this. At 11° south latitude in the Cordillera Blanca, the rainy season extends from November through April, with maximum intensity in January and February. Nonetheless, botanizing in this peak rainy season is quite comfortable,

because the rain never seems to be persistent. This is also the warmest part of the year—but is called “winter.” The Peruvian “summer” is July, August, and September, the sunniest months. Most mountain climbing is done in the latter season, even though it is the coldest part of the year.

Flowers bloom here virtually year round, but the peak is from January through June. I’ve returned in June to collect seed of a plant I saw blooming in February only to find that it hadn’t ripened its seed yet!

In recent years, the political situation in Peru has been quite stable. The entire infrastructure of the country has been rebuilt in the past six to eight years. Roads are good, crime is down, terrorism is nonexistent, and best of all, corruption is low. You can rent a modern car from an international car rental agency in Lima, and you’re off to the mountains. You can enjoy a good dinner, too: Peru, a country once known for its fine cuisine, sank into poverty in the 1980s but now has wonderful food again.

Huaraz is a small city situated at 10,000 feet (3048 m), up against the Cordillera Blanca. I call this area a “mini-Himalaya,” not because the mountains are lower but because the range is so compact. There are twenty mountains over 19,000 feet (5800 m) elevation within a distance of 30 miles, and half of those are over 20,000 feet (6200 m). Huascarán’s south peak, at 22,300 feet (6800 m) is the highest peak anywhere in the world’s tropics.

There are more than 800 species of vascular plants in the park that encompasses these peaks. Many of the genera represented are present in other Southern Hemisphere locales, but there are also many endemics.

As is often the case in the Andes, access is by roads that lead up canyons, to a pass if you’re lucky, and graded if you are even luckier! The Tumi Hotel in Huaraz is a comfortable, friendly place to stay. Room 418, if you don’t mind the climb after hiking all day, has a spectacular view of the heart of the mountains. Bring your 100-watt bulb, though; typically, all the wattage of an entire South American hotel doesn’t add up to 100.

My favorite genera here are *Gentianella*, the South American “gentians,” and *Nototriche* and the closely related *Acaulimalva*, two members of the Malvaceae (mallow family). The latter two have relatively large mallow-type flowers which are usually sessile, and they come in a wide variety of colors and leaf forms.

The gentianellas are often of the closed type. Their brightly colored balloon flowers remind us of the Albuquerque hot air balloon festival. Many are bright red, yellow, blue, or purple, occasionally with vertical stripes of a contrasting color, such as yellow on a red base color, or red on white.

*Werneria* is another common genus, usually rosette-forming with sessile pink-and-white daisy flowers. *Mniodes pulvinata* is a *Raoulia eximia* lookalike which grows in crevices on vertical stone walls and may reach 3 or 4 feet (c. 1 m) across.

But it is the nototriches that abound in this area. They often form mats intermingled with other plants, their surface scattered with large, sessile flowers of crimson, sky blue, brilliant blue, white, or pink. The flowers of some approach 3 inches (7.5 cm) in diameter.

The road from Lima directly to the east goes over a 16,000-foot (4877-m) pass and descends to the small city of Tarma. The Tarma Hotel is large and comfortable,

and it has hot water if you remember to ask them to turn it on. It also serves as a community center where activities such as seniors' band practice take place (no experience necessary).

Tarma is also at 10,000 feet (3048 m) elevation. The road to the higher areas is well paved now. A road runs north and south at about 12,000–14,000 feet (3660–4270 m), and hikes up the hillsides to 15,000 feet (4570 m) are convenient. Our best find here is *Nototriche mcleanii*, a turf plant that forms a mat of fuzzy foliage studded with large, sessile, crocus-like blue-lavender flowers. It is quite easy to grow in the alpine house. Also here is tiny, bright red *Ranunculus leichleri*, with  $\frac{3}{4}$ -inch (2-cm) flowers on  $2\frac{3}{4}$ -inch (6-cm) stems.

This is only a tiny sample of the remarkable flowers in these two areas. One could visit them both in a week or easily spend a week in each area.

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David and Donna Hale's gardens in Portland, Oregon, and on the Oregon coast feature a great range of plants, many of them brought back as seed from journeys abroad. David gives slide lectures to NARGS chapters and other meetings and will be writing a regular column in the *Rock Garden Quarterly*. See some of their travel and plant photos at <<http://www.photos.yahoo.com/bc/davidhale2000>>.



*Asarum hartwegii* Cyclamen-leafed Ginger  
Drawing by Baldassare Mineo





*Trillium grandiflorum*, *Trillium erectum*, *Smilacina racemosa*, *Dentaria diphylla*, and *Podophyllum peltatum* in Ohio State Park, Pennsylvania. (photos, Charles G. Oliver)

*Chrysogonum virginianum*.







*Erythronium americanum* (left). *Arisaema triphyllum* (right). (photos, Charles G. Oliver)

*Hepatica americana.*





*Chamaecyparis lawsoniana* 'Minima Glauca' (left). *Chamaecyparis obtusa* 'Nana Aurea' (right).  
(photos, Todd Boland)

*Chamaecyparis pisifera* 'Compacta Variegata' (left). *Chamaecyparis pisifera* 'Minima' (right).







*Nototriche engleriana*, 13,000 feet, near Tarma, Peru. (photos, David Hale)

*Ranunculus leichleri*, 14,200 feet, Cerro de Pasco, Peru.





*Gentianella vaginalis*, 14,000 feet, near Cerro de Pasco, Peru. (photos, David Hale)

*Gentianella scarlatinostrata*, 13,700 feet, east of Lima, Peru.







*Viola weibelii*, 14,200 feet, Cerro de Pasco, Peru. (photos, David Hale)

*Geranium nivale*, 13,200 feet, Central Peruvian Andes.







*Rhododendron camtschaticum* in Nova Scotia. (photo, John Weagle)

*Rhododendron camtschaticum* in the wild near Nome, Alaska. (photo, Rick Lupp)





*Uvularia grandiflora* with *Mertensia virginica*. (photo, Gene Bush)



# *Uvularia*

## *The Bellworts*

Gene E. Bush

Wildflowers that are distributed across large areas usually end up with many common names. This is especially true if the plant has attractive flowers or is useful for food or medicine. The bellworts—*Uvularia* species—of eastern North America are no exception. They have lovely blooms; the young shoots were eaten much like asparagus; and the roots were used in a salve for wounds and sores. When the wood and meadow served people as a medicine chest and food reserve, these plants were a popular commodity. This led to *uvularias* being known not only as bellworts, but also as merrybells, haybells, strawflowers, wild oats, and other vernacular names: scanning a couple of my wildflower references disclosed no fewer than thirteen. Some of these names refer to the shape and color of the flowers, which are hanging bells in various shades of yellow.

*Uvularia* is a genus in the lily family (Liliaceae), which in the broad sense is quite large and diverse. This great diversity, encompassing such well-known plants as tulips, onions, asparagus, trilliums, Solomon's seal, and bellworts, has been subdivided recently, and under this system *Uvularia* is in the *Uvulariaceae*. The name *Uvularia* (pronounced "you-view-láir-ia") refers to the resemblance of the soft-looking, pendent flower to the uvula, the fleshy lobe that hangs from the back of the human palate.

There are five species to collect. Four species are found growing from South Carolina northward into Canada in the eastern United States. The fifth species, *U. floridana*, is native from South Carolina southward into Florida. All are worthy plants for the woodland garden.

Two species of merrybells are relatively common in our southern Indiana woods. The large-flowered bellwort, *Uvularia grandiflora*, is the showier of the two local species and the first one I planted in my garden. It is also the one you are most likely to find, either in the woods or in wildflower and perennial nurseries. Various heights are cited for the plant, but mine reaches about 18 to 20 inches (45–50 cm). The flowers are a quiet, light yellow, about 2 inches (5 cm) in length and slightly twisted. The foliage is medium to pale green, sometimes with a yellowish cast, and with whitish down on the underside. The stems are stiff, with few leaves except near the top. The stem then branches, drooping over to suspend the flowers. Because of its drooping branches and its flowers that open fully before all

the foliage matures and unfurls, the blooming plant has a curious “wilted” look.

I have found that, in nature, *U. grandiflora* has a rather open growth habit and is not as showy as it can be in the garden. When transplanted to a bed of good humus-rich soil, it quickly forms clumps of stems and foliage, making quite a show both in and out of bloom.

*Uvularia perfoliata*, the bellwort, is the shorter-growing of the two Midwestern plants, and its flowers are a bit smaller as well, just over an inch (2.5 cm) long. Both species have leaves that are perfoliate (“pierced” by the stem). The foliage of *U. perfoliata* has a more bluish or grayish cast, and it has no short hairs on the underside of the leaves. I also find that this species is more open in growth habit. To contain it a bit and force tighter clumps of foliage and flower, I bury a circle of lawn edging around my plants.

One of the easiest ways to identify the various species of *Uvularia* is to remember that the four northern species can be divided into two species that have perfoliate leaves, and two species in which the leaves clasp the stem but do not encircle it without a break. *U. grandiflora* and *U. perfoliata* have perfoliate leaves, and the following two species do not.

*U. sessilifolia*, the sessile-leaved bellwort, has more slender stems and leaves. As the name implies, the leaves have no stalks and clasp the stems. The foliage has a yellowish background color with green veins. The flowers are pale yellow or straw-colored. After the blooms have been pollinated, look for small, triangular, pale green pods. This species also has the distinction of being a bit more of a runner. Though all *uvularias* spread by stolons, some wander farther than others.

*U. puberula* (syn. *U. pudica*) has the common name “mountain bellwort.” Although I have had all three of the species mentioned above in my garden for some years, I have yet to see this one show up in a native-plant catalog. It is very similar to *U. sessilifolia* in general appearance, except that the leaves are shiny green on both sides. The flowers are light yellow and about one inch (2.5 cm) long. I finally obtained *U. puberula* this year from fellow shade gardeners, and it has found a home with the other species in my garden.

I seriously doubt that the fifth species, *U. floridana*, would be hardy in my zone 6 (or frequently, zone 5) garden because of its more southerly range, so I have not tried to obtain it.

Collectors will be interested to know that a yellow variegated form of *U. sessilifolia* is showing up more and more often in conversations and catalogs. I have heard mention of a hybrid between two of the species but have been unable to confirm its existence. I would be glad to learn of additional cultivars or forms.

All *uvularias* prefer a rich soil high in organic matter and the shade of deciduous trees. In the wild, I usually find them at the edge of the woods. Propagate garden plants by lifting them in fall after the tops wither and dividing the rhizome. Replant the divisions immediately; do not let them dry out.

My favorite companion plant to grow beside *uvularias* is the Virginia bluebell (*Mertensia virginica*), with its contrasting soft blue and pink blooms and wide blue-green leaves. After the bluebells have gone dormant in July, the foliage of the merrybells remains until hard frost. Trilliums are another favorite companion, especially the maroon blooms and mottled foliage of the recurved trillium (*Trillium*



*recurvatum*). Closer to the “forest” floor, I have the pristine white flowers of blood-root (*Sanguinaria canadensis*), along with its frosty young foliage. Ferns provide a wonderful cool background. You may also want to consider the many species of Solomon’s seal (*Polygonatum*), twisted-stalk (*Streptopus*), or fairy bells (*Disporum*).

Gene E. Bush gardens in southern Indiana. He offers uvularias and many other plants through his Munchkin Nursery & Gardens, 323 Woodside Dr, NW, Depauw, IN 47115-9039; catalog, \$3; website, <<http://www.munchkinnursery.com>>.

*Leucojum autumnale*

Drawing by Baldassare Mineo



# Where Are They Now?

## *Plant Enthusiasms from the Past*

Jane McGary

On my bookshelf is a series of volumes of the *Bulletin of the Alpine Garden Society* from the 1930s and 1940s, kindly given me by a friend who had duplicates. There is much to fascinate the modern reader in these yellowing pages—travels over bad roads before the days of four-wheel drive, new discoveries in the American West, or the struggle to keep alpine gardening alive during World War II (“Raising Salads in the Alpine House”).

As I read, I often noticed enthusiastic descriptions of plants whose names were unfamiliar to me. Many of these, of course, have undergone nomenclatural changes and are well known under other names, but others seem to have dropped off the gardener’s radar screen. Where are they now? Did they prove so recalcitrant in gardens and alpine houses that people gave up on them? Or did they disappear from cultivation just because the few people growing them moved, or died, or failed to distribute them? (In the following notes, the year, volume, number, and page of the AGS *Bulletin* in which the plant is discussed are cited in parentheses.)

In 1938 S. G. Fiedler went “questing for *Cassiope hypnoides*” in the mountains of Sweden (Will Ingwersen was also in the party). He photographed many plants familiar to me from Alaska (1939, 7.4:362). The one that surprised me was what looks like a very large-flowered form of *Trientalis europaea* (Primulaceae). A form of this charming spring-blooming plant occurs in Douglas fir forest in the Pacific Northwest states and pops up here and there in my garden, but the plant Fiedler illustrates looks much more desirable. *Trientalis* have little tubers on their running rhizomes which can be taken up when dormant and stored for a short time in slightly moist peat; perhaps someone could propagate this Swedish form and distribute it. *Trientalis* is an adaptable plant for the cool woodland garden. Its wide-ranging habit is unlikely to annoy any but the most control-freakish gardener, since it is a small, neat plant with a stiff rosette of leaves on its short, wiry stem.

An intrepid plant explorer who often wrote for the *Bulletin* was Dwight Ripley, perhaps best remembered for his introductions from the arid parts of western North America. In the San Bernardino Mountains of southern California he found what he describes two tiny *Potentilla* species with white leaves that “resemble nothing so much as a long silver worm” but are in fact “composed of a great number of tiny, closely imbricated leaflets glittering all over with the very finest silk” 1937,

5.3:244). These plants are now called *Ivesia argyrocoma* and *I. santolinoides* (Rosaceae), and the former at least has appeared in Ron Ratko's Northwest Native Seed catalog. They are likely to be extremely difficult to grow outside their parched home mountains, which experience both cold winters and blazing hot summers. Ripley admired *I. santolinoides* more than its cousin because it has more attractive flowers.

All of us like the genus *Erodium*: pretty foliage, usually much dissected and often gray, in dense tufts, and charming flowers produced over a long period in summer. Ripley found two interesting ones in North Africa (1937, 5.3:242). *Erodium medeense* "from Médéa in the mountains behind Algiers" has the largest flowers in the genus at 2 inches across, an observation of Battandier confirmed by Ripley. Sadly, these big flowers are "pale" and the foliage "coarse." In contrast, *Erodium tordylioides* is "quite neat and dwarf," with attractive, dark-spotted flowers. Ripley found it "clinging to the cliffs of the Cirque d'El Ourit near Tlemcen, and most sparingly even there." His catalog of other rarities on these cliffs leads me to hope that the goats haven't eaten them all by now. If anyone is brave enough to botanize in the Little Atlas range of northwestern Algeria in the present political climate, please take a look.

C. S. Garnett reported on botanizing in Morocco in an article published in installments in volume 6 (1938). He mentions *Anacyclus pyrethrum* subsp. *depressus* (or whatever its name may be this year) mostly to compare it unfavorably to *A. radiatus*, with "ray florets . . . of a rich yellow with deep mahogany colouring on their undersurface . . . in var. *sulfureus* Braun-Blanquet et Maire, the entire flower—which is of excellent form—is a beautiful deep sulphur-yellow." Garnett also was enthusiastic about the dwarf salvias he found. *S. phlomoides* is with us, but I haven't encountered *S. moureltii*, "a plant of good, dwarf, branching character . . . with an abundance of pretty pale blue flowers," or the deep blue *S. lanigera*. North Africa seems to have engaged plantspeople of that era more than it does now. I wonder if some of these plants failed to thrive in England and so were set aside after a few years, and if they would enjoy the American West better.

Southern Africa was not as much to the fore as it is today, but a few plants are mentioned, some in a note by (I imagine) the Mrs. Milford honored in the name of *Helichrysum milfordiae*. An anonymous writer praises *Anagallis meyeri-johannis*, quoting Reginald Farrer: "It grows by the verge of eternal snows on Kilimanjaro, from 9,000 to 13,000 feet—a most beautiful thing, quite prostrate, and rooting all along, with little leaves so fat and crowded against each other . . . that they have to stand up in two packed rows." John Grimshaw tells me it is now *A. serpens* subsp. *meyerijohannis* and writes, "The nicest form I've seen grows in the vertical bog on Mt. Kenya, with genuinely pink flowers with rounded petals. . . . The flowers are rather sparsely produced at (I think) equinoctial periods. Despite that it has its charm. . . . It is perfectly easy to grow under cold glass kept permanently damp."

In the dark days of the war, P. L. Giuseppi, a Suffolk physician, contributed many notes on plants he had seen in the wild in past years and on those in his garden. He praises the prostrate *Scutellaria hirta* (1944, 12.3:129) and writes that he collected it in the Balkans, though the *RHS New Dictionary of Gardening* identifies it as being from Crete (I wonder if he was conflating it with *S. alpina*). I don't remember seeing it in seedlists from either of these well-botanized regions but will keep an eye out for it.



Giuseppi had many plants of the curious Central American *Weldenia candida* (Commelinaceae), giving him “countless flowers . . . and 100 seedlings” (1944, 12.3:129). This marginally hardy plant produces a rosette of fresh green leaves, off-spring on stolons, and a succession of ephemeral, 3-petaled white flowers about an inch (2.5 cm) wide. Another gardener, F. M. Peacock, wrote that it was “worth going without dinner for a week to acquire.” I *do* know where this one is; as I write, it is flowering here, thanks to Lesley Cox of New Zealand. I spotted it on her sale table at an NZAGS study weekend last January and persuaded her to send me one in dormant condition later. She told me she had brought her original plant from England; I wonder if it is descended from Giuseppi’s? What a long, strange trip it’s had from the volcanoes of Guatemala!

In the early 1940s Giuseppi’s wife died, and he wrote an elegiac essay remembering their travels through the mountains of Europe: “On the Sierra Javalambre she found on the summit the great white plants of *Erodium trichomanefolium*.” (It is now *E. petraeum* subsp. *crispum*, and not uncommon in gardens.) His memories are intertwined with landscape as he writes, “On a white sand dune in the sea south of the Tagus we found *Lithospermum fruticosum*, with beautiful blue flowers. Here we sat on the sands, and after a long search we found the three of four seeds from which all our plants have sprung.” This small Mediterranean shrub, now called *Lithodora fruticosa*, seems not to have accompanied its cousin *L. diffusa* to our gardens. Another shrublet the Giuseppis found was “the rare, beautiful dark-blue *Polygala microphylla*, which has been one of our disappointments” (1942, 11.2:110).

A plant that I cherish but don’t see very often in American gardens is *Thalictrum chelidonii*, a fairly short-growing species which, H. Clifford Crook wrote, “derives its greatest charm from the flowers which are, individually, the largest in the genus” (1943, 11.2:104). The showy part of the flowers is the rose-lavender petaloid sepals, similar to those of the larger *T. delavayi*. Crook thought his plants were monocarpic; here, they rarely flower more than twice, but they set plenty of seed that retains its viability well in storage, so I keep them going by sowing batches every 2 years or so.

Crook was also growing *Phlox mesoleuca*, one of a group of southwestern U.S. and Mexican phloxes that became fashionable in American rock gardens in the late 1970s. Only 15 or 20 years ago a number of selections and hybrids (‘Mary Maslin’, ‘Paul Maslin’, ‘Arroyo’, and others) were offered by the Siskiyou Rare Plant Nursery and Colorado growers, but interest in them seems to have waned. It is true that their habit is straggling, and they need room to roam, but it would be good to see them back.

A horticultural genre I enjoy is the sort of article in which the author addresses an obsession with a group of plants that everyone has seen but hasn’t given much attention. T. C. Mansfield (1937, 5.2:174) did this in “Thirteen Hypericums.” The one I decided to acquire is *H. reptans* (not to be confused with *H. repens*, a name applied in gardens to *H. linarioides*), a 2-inch mat-former from the Himalayas. Mansfield describes it: “A freely-growing evergreen round-leaves prostrate plant . . . it becomes quite late in the year covered with bronze buds, which open to disclose large golden salvers of overwhelming size.” There is more in that vein—he was not an elegant prose stylist like Giuseppi. The contributor to the *AGS Ency-*



*clopaedia* disagrees in calling it deciduous, but admits it “deserves to be planted more often.”

As it does today, the early *Bulletin* regularly published reports of plants appearing at shows. The shows went on despite the Blitz, and in September 1943 Lord Aberconway, the famous rhododendron breeder and owner of Bodnant garden, received an Award of Merit for *Gaultheria hookeri*, a shrub to 3 or 4 feet (1–1.5 m) tall which must have been displaying its “chief attraction,” large, bright blue fruits. It later was awarded the even more prestigious F.C.C. (First Class Certificate) and must still be in commerce in Britain, but I don’t recall seeing it in the Pacific Northwest, where plants of this genus are very popular, though not all are reliably winter-hardy.

A plant that can be depended on for winter bloom in the cold greenhouse is *Campanula carpatha*. The photograph of *C. heterophylla* (1943, 11.2:96) reminds me of it and also of the popular Star of Bethlehem, *C. isophylla*. It came from Crete to England. The *AGS Encyclopaedia of Alpines* remarks that its stems are brittle, also a feature of *C. carpatha*.

In 1942 *Mertensia rivularis* var. *japonica* received the Award of Merit. The *AGS Encyclopaedia of Alpines* says this is a synonym of *M. pterocarpa*, but the tidy, glaucous-leaved specimen illustrated bears little resemblance to the leggy, small-flowered plants I grew from exchange seed under that name and had trouble eradicating from a moist gravel area. *M. pterocarpa* appears in exchange seedlists often, so perhaps I’ll try it again and hope for something closer to the A.M. version.

The field accounts of legendary plant explorers fill many pages of these old journals. George Sherriff and George Taylor contributed notes on Himalayan primulas so remarkable that the editor included a few color photos (1940, 8.2.111). *Primula umbratilis* from the mountains of Bhutan had been flowered in Edinburgh in 1918 and crops up in show reports of the 1930s and 1940s, but I have not heard of it being grown, nor had Josef Halda when he published *The Genus Primula* (1992). It is a graceful soldanelloid species with a “powerful fragrance.” *Primula chasmophila*, with “rich blue-violet flowers faintly veined dark crimson,” was found on one isolated peak in central Bhutan in 1915, and seed collected from it grown to flowering in Edinburgh soon after that. In 1937 Sherriff revisited the peak, photographed it, and brought seed back to reintroduce it. By 1940 it was “thriving outside in several northern gardens.” Does it still?

Peter Davis is another name familiar in the annals of plant-hunting. In 1937 he spent 3 weeks in Crete, where he found some remarkable things (1939, 7.1:25). Mark McDonough, the “Onion Man,” tells me *Allium circinnatum* may not be in cultivation, but anyone would want it after seeing the photo of this tiny plant with its two pink bells, its remarkable hairy stem, and “two narrow leaves, shaggy with white hair, and so twirled and twinked that they resemble nothing less than ethereal corkscrews.” The same article reports the first collection of *Biarum davisii*, an adorable aroid with tubby pale pink spathes that sit flush with the soil; it is widely grown, but not easy to coax into flower every year.

Davis wrote that *Cotyledon serratum*, now *Rosularia serrata*, was “the only cotyledon I want to grow in my garden. My horticultural whims, which are based on no reason whatever, change so rapidly that I dare say in a year or two I shall be reveling in the Crassulaceae, ericaceous shrubs, conifers, or even rare grasses and decorative

vegetables.” Certainly “domed clusters of rosettes” issuing stems of “pendent rosy bells” would appeal even beyond the succulent circle.

I had never read about the shrubby *Dianthus* species, but Davis saw a lot of them on Crete and the Greek islands and sorted them out for the reader. *Dianthus arboreus*, *D. rupicola*, *D. fruticosus*, *D. juniperinus*, and *D. xylorrhizus* are the names he mentions. *D. fruticosus* receives the most admiring description: “[None] of the others makes so large a shrub with so massive a trunk, or produces such a fine head of flowers. . . . The flowers are larger and a richer pink . . . the centre ornate with much crimson filigree.” Undoubtedly a challenge in England, these might become showpieces in California or Arizona rock gardens.

At the other end of the *Dianthus* spectrum is *D. simulans*. Something called this inhabits most American rock gardens, grown purely for its cushion of minute foliage. It flowers sparsely, if at all, and the flowers are tiny. What, then, is the object by that name photographed on Mount Ali Butusch in southern Bulgaria by Wilhelm Schacht? (1942, 10.2:130) Tucked in a crevice, it appears to be a marvelous tuft of large flowers held well above the cushion. It is one of four choice plants discussed in the article that are said to be endemic to that mountain; however, Bulgaria isn’t a very appealing destination these days, either.

Also better in dry gardens are most species of *Stachys*. I’d like to see *S. spinosa*, “one of the crazier Labiates,” a cliff-dweller from Crete and Anaphi. “Painful to the touch but easy on the eyes,” it is a dense silver shrub about a foot (30 cm) high and wide, with large flowers borne in the axils of vicious spines. Perhaps it could be grown alongside another plant Davis mentions, *Verbascum spinosum*, “the Mad Mullein.”

“Ferns, as a rule, are not plants I want to grow, but I am certainly glad to have this one,” Davis writes of *Notholaena vellea*. The species name means “fleecey,” and I would certainly be glad to have it too, with its fronds “three or four inches long and densely covered with blue-grey wool,” as it appears in its photo, huddling on a lichen-covered rock.

*Campanula propinqua* is only an annual, but the photo of it (1940, 8.2:137) and Crook’s description made me want to have it seeding around my garden. It shows a large-flowered form that received the Award of Merit in 1931 under the name *C. cecilii*. It comes from “sub-alpine regions of Persia” (Iran) and looks like a prime candidate for the dry border, too; I can imagine it blooming among *Clarkia* and other bright little annuals.

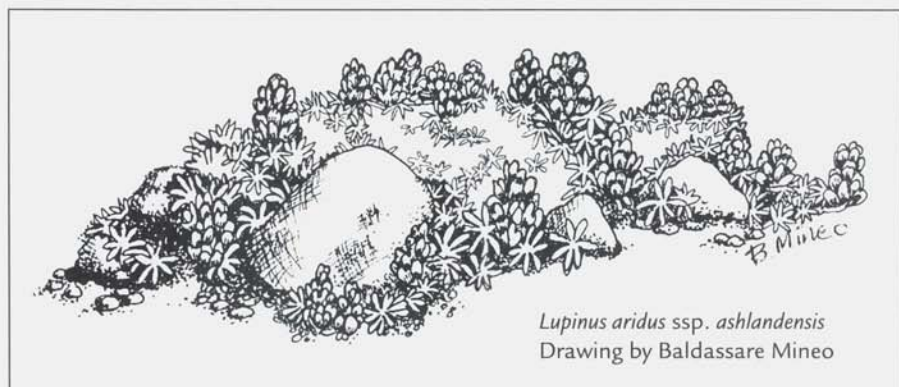
There was an ongoing interest in the hardier gesneriads. Most American rock gardeners have *Ramonda myconi* and perhaps other members of that genus, or the equally easy *Haberlea rhodopensis*, and the elite grow *Jankaea heldreichii* and perhaps its interspecific hybrids. I’ve also seen *Briggsia muscicola* grown in a pumice rock in a saucer of water here here, and *Opithandra primuloides* doing well outdoors in North Carolina. There are some unfamiliar ones in these old pages, though. *Ancyclotemon concavus* has quite a display of deep orange tubular flowers (at least as Giuseppe grew it) and attractive quilted leaves. It comes from the high mountains of Yunnan, where it seems to have grown as an epiphyte on mossy trees and boulders. If it hasn’t all been turned into herbal medicines or made extinct by deforestation, the many Americans now visiting that area may find it again.

The Balkans were a favorite destination for these travelers, though they are unanimous in abusing the hotels. P. L. Giuseppi stopped “at dirty Leskovik to admire *Ajuga piskoi* which bears large pink flowers and is even more beautiful than the dark purple *ovata* from Tibet.” The latter may be *A. ovalifolia* of today’s reference books, though probably not much of today’s gardens. We should not let contempt for the groundcover *ajugas* blind us to the genus’s possibilities. Another unfairly disdained genus with one center in the Balkans is *Viola*, and the early writers paid it much attention, though the frail-looking potted specimens illustrated probably didn’t do justice to their wild parents.

There is no limit to the wilder shores sought by plant-hunters. Who grows the insectivorous, snapdragon-like *Utricularia* in an alpine-gardening context? Yet Giuseppi praises “*Utricularia schweinfurthii* . . . from the Abyssinian Mountains, where it grows in shallow bogs . . . the plant is so tiny as to seem stalkless. The flowers appear from November to January, and are quite large and of a lovely shade of blue, with purple spots in the throat. . . . It and the beautiful *Craterostigma* of those remote mountains draw me as by a magnet to that inaccessible country.”

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Jane McGary gardens in the foothills of the Cascade Mountains in northwestern Oregon.





# Immersed in the Details

One pot: a multitude of seedlings. This is the dilemma of success that confronts any seed grower worth his soilless mix, sooner rather than later. The question is when and how to separate the new arrivals, and gardeners' answers seem as various as chess openings: wait until the first true leaves have opened; transplant while only cotyledons are showing; practice traditional "pricking out" with small implements; let the medium dry out and drop the lot onto a table to disengage intertwining root systems; transplant clumps of seedlings rather than individuals; choose some to save, and snip the tops off the others; or avoid all these decisions by sowing seeds in single cells, pots or "soil blocks."

I have seen all these strategies promoted in gardening literature. All of them aim to minimize root damage—"disturbance"—and all have merit. There is another method, though, which gets less attention but is a useful addition to the grower's bag of tricks: immersing the seedlings in water. I didn't originate the "immersion technique," though I came up with the idea on my own a few years ago because I was tired of sacrificing seedlings that had been left too long in crowded pots.

"Too long," unfortunately, can come quickly in the case of vigorous species or abundant germination, resulting in a complex (and invisible) puzzle of tangled roots. Immersion was as close as I could come to my frustrated wish simply to make the starting medium disappear, leaving me with just the plants and no doubts about which roots went where.

There are three main reasons to immerse seedlings:

- It allows you to see root systems and usually to separate them with greater precision than you could otherwise.
- It essentially dissolves the soil around the roots, probably the gentlest method of handling available, though some of this advantage is negated if seedlings must still be manually separated.
- The roots of the seedlings you're not working with don't sit exposed to air while waiting their turn.

When to immerse is less clear-cut. I tend to immerse nearly everything these days because I'm comfortable with the technique, and because I feel that it's uniquely gentle to my seedlings. It is true, however, that immersion can be more time-con-



suming than other procedures and won't always give better results—though the results should be no worse. The practical approach is not to immerse unless you're concerned about delicate seedlings, or unless you've found roots growing together and wish to leave each plant with as many of its own roots as possible.

My "kit" for immersion consists of the following: a translucent plastic cake cover, sturdy enough to carry when filled with water, deep enough to hold several inches of water, wide enough to work in, and short enough to reach down into comfortably; two bamboo meat skewers (essentially foot-long toothpicks); small, sharp scissors; a hand sprayer like those used for misting houseplants; a towel; and a fluorescent desk lamp. Of course, you'll also need pots and soil.

First, fill your container with water. I use lukewarm water for my comfort and to avoid shock to the plants, but I've drawn water from a hose on occasion and noticed no problems.

Unpot the seedlings and set the soil mass in the water. Depending on how much they've grown, the soil may simply melt away from the roots, you may be able to gently swish the rootball with your fingers and remove most of the soil, or you may need to insert a skewer into the rootball and work it back and forth to break up stubborn pockets. Get the roots as clean as you can, then remove the plants and change the water.

Now the fun begins. If the seedlings are simply coming apart as you watch, compliment yourself on your foresight for having gotten to the job in such a timely manner. If not, it's time to apply your skewers and possibly your scissors. Use the skewers to tease apart intertwined roots; you can anchor the rootball in place with one while manipulating the other to ease apart a "knot." When things just can't be completely unraveled, use the scissors to sever knots with minimal tearing.

A few tips:

- Don't use a mix containing bark to grow seedlings: roots grow right through bits of bark, and the results are nightmarish. Roots can even catch bits of perlite or the small twigs found in peat, but this is nothing compared to what happens when the medium is full of bark.
- There *are* limits to what can be extricated. If roots are circling the pot and clinging to each other, you'll simply have to cut some of them. Still, if time allows and the plants are precious enough to warrant extraordinary measures, it's truly surprising what patience can achieve. It often helps to stop working at the plants and let them sit for a few minutes. You may find that this allows that horrible tangle to relax.
- Sometimes a pot of seedlings really is hopeless, and the best you can do is choose a few to save and cut the rootball apart, leaving each as many of its own roots as you can manage.
- Even if you can get them apart, remember that the whole point is to avoid damaging roots, and consider whether extensive manipulation will best accomplish this goal.
- This job requires excellent light. When I'm working indoors, my desk lamp provides backlighting and lets me see fine detail. This is also why I use a translucent container.

Once apart from its brethren, each little plant must be potted up. Do not simply grasp a leaf and pull your babies straight from the water: their roots will cling together, looking like new tapers drawn from molten wax. I usually spread my fingers beneath the roots and stem of a plant, then carefully lift it from the water lying flat, keeping the roots fanned as much as possible. I then gently lift it off my hand, sometimes first sprinkling the roots with a bit of soil if I'm worried about them sticking either to me or to each other.

My final two pieces of special equipment come into play once a seedling is potted up. The sprayer washes off the soil that inevitably gets on wet leaves, and the towel dries my hands so soil and leaves don't stick.

My first attempt to grow *Phyteuma balbisii* is a good example of the usefulness of immersion. My first problem came when I dropped all the seeds into the pot at once. No great cause for concern, I thought. I'd just immerse them soon after they sprouted and separate them handily. However, their germination went unnoticed for at least a day in my unlit shed. When I moved them to the greenhouse, some simply fell over and expired, and the rest were too fragile to handle.

Once they'd greened up and had some time to develop, I immersed them. Their roots were still too tightly bound to separate fully, but washing the soil away allowed me to pull each plant out of the cluster and cut it away with as many roots as possible. The plants were then placed into pots covered with plastic bags and treated as cuttings. All of them bloomed a year later.

Mike Saganich  
Weymouth, Massachusetts

# From *Abies* to *Zizia*

## *Navigating Seedlists*

“We call it the Rock Garden Society, but you don’t have to have a rock garden to join. It’s really the Odd Plant Club.” That’s one line we use around here to recruit new members. When we notice that a plant sale customer, botanic garden volunteer, or chance acquaintance gets a gleam in her eye on discovering unusual small plants, we know we’ve spotted a potential NARGS member.

Almost as soon as the novice’s appetite has been whetted by chapter slide programs, a Winter Study Weekend, and a few issues of the *Rock Garden Quarterly*, the first society seed list arrives. Four to five thousand botanical names, mostly unfamiliar, in minute type—and you can have 25 of them (or more, if you donated). If this is as overwhelming to you as it was to many longtime members when we started out, we hope this article will assist you through our society’s own seed list and lead you on to many others.

Why grow plants from seed in the first place, when there are dozens of nurseries competing to sell you the plants ready for your garden? After all, it takes some space and quite a bit of time. The answers:

- You save a lot of money, especially if you depend on exchanges.
- You get a nice group of plants instead of one specimen, so you can set them into the garden in a naturalistic way, making communities instead of spotty, unfocused plantings.
- The seedlings that survive from a population are likely to be the clones best adapted to your garden, and they may survive better than individual plants selected and grown in a different environment.
- There are thousands of plants you can’t get any other way.
- You can trade the extras to your friends or sell them to benefit organizations.

You don’t need a greenhouse to raise rock garden plants from seed. One compiler of this article grows hundreds of kinds on a roofed deck. Some gardeners just set their pots out in the open, though this risks weather damage and slug attack. A simple cold frame is the choice of many seed-raisers.

As for the time it takes, a great many typical rock garden plants can be raised from seed to flowering in little more than a year. The rare plant that finally blooms



after eighteen years makes a good story, but the great majority become handsome specimens by their third or fourth year from sowing.

Now that your objections are overcome, let's turn to the seed list. Experienced "seedaholics" (a term actually current among rock gardeners) use several strategies to sort through the plethora of choices:

- Over the year, keep an alphabetized "wish list" in a computer or card file. Add names to it as you read magazines and books or bring home notes from programs and garden tours. When the seed lists arrive, cross-check them against your file.
- Each year, decide on two or three genera or families of plants to explore. Start with easy ones offering plenty of choices, such as *Aquilegia* (columbines), *Penstemon*, or *Dianthus* (pinks). Order half a dozen or more items from each of your focus areas. You'll learn a lot about growing those groups, and you'll obtain an interesting mini-collection in short order.
- Order seed of plants for just one part of the garden—woodland, scree, or trough. Derive your lists from articles and books on these and other specific branches of rock gardening.

After you've marked your catalog and sent in your order, *do not lose the catalog*. Do not lend it to your pal who never returns books. Many suppliers, including the rock garden societies, identify the packets of seed *only* with the catalog numbers.

## Lost in the Web of Words

Seed lists all use botanical names, so it's necessary to get comfortable with them. If it seems daunting, remember that you already use many of them: *Begonia*, *Petunia*, *Zinnia*, *Dahlia*, and hundreds of other familiar flower names. They are words, that's all; it is no more difficult to learn what a "*Zauschneria*" is than to learn what a "carburetor" is—no more difficult to associate "*Penstemon virens*" with a cheerful spike of blue flowers than to associate "Norman Murgatroyd" with your next-door neighbor's face.

Sometimes the names have mysterious abbreviations attached to them. These may or may not be explained in the introduction to the list. "Subsp." and "ssp." are both abbreviations for "subspecies," and "var." for "variety." These distinctions are important for rock gardeners because a species may have subspecific or varietal forms that are far superior to the typical plant (the "type") from the gardener's point of view. If your wish list mentions a subspecies or variety, be sure that's what you're ordering, or you may end up with a 3-foot plant instead of the 6-inch one you wanted.

Donors and other seed collectors may not be sure exactly what they have collected, especially if they saw the plant only as a bare stem with a seed capsule on the tip. An item may be listed, for example, as "*Fritillaria ?biflora*"; the collector knew it was a fritillaria, and *F. biflora* is about the right size and native to the area, but there are other species with similar plants and capsules. An even more tentative identification is "*Fritillaria* sp."; the collector knows the genus, but doesn't want to guess

at the species. The specialist collector is likely to order wild-collected seed without a species designation on the outside chance of getting something rare.

A related abbreviation, usually seen in the lists of private collectors who work in remote areas, is "aff." This stands for the Latin word *affinis*, *affine*, meaning "near." Its use in a seed list means that the plants from which the seed came resemble published descriptions or herbarium specimens of the species named, but do not coincide completely with them. It may be a variant form of the species—either genetically different or environmentally conditioned—or it may eventually be determined to be a new species entirely (the former is more likely).

Another little Latin word used in seed lists is *ex*, meaning "out of, from." It can be used with a geographical name, as in "*Thalictrum* sp. *ex* Afghanistan," or with a cultivar (clone) name, as in "*Lewisia* *ex* 'Pinkie'." In the former case, it means that the seed comes from a cultivated plant originally derived from the place mentioned. In the latter, it means that the seed parent is the named cultivar—but the seedlings are unlikely to be identical to it.

"Ex" may also occur with a mysterious-looking collection of letters and numbers, as in "*Crocus sieberi* ssp. *sublimis* *ex* JJA352552." This is a "collector's number" which identifies stock descended from a documented plant or seed collection from a specific site in the wild. Specialists keep track of these numbers because they may be a clue to stock that is hardier, more adaptable, or more beautiful than other members of the same taxon (species, subspecies, or variety). Collector's numbers may be referred to when a species is positively identified or renamed. If you get involved deeply enough to want to track down the ultimate origin of your plant, you can delve into old seed lists from—in the case cited—Jim and Jenny Archibald, find the number, and perhaps add to your enjoyment of your patch of bright crocuses blooming a long way from their ancestral home on Mount Parnassos, Greece, on a slope below fir woods at 1500 meters elevation. The *Plant Finder*, a British publication, includes a key to many of the collectors' initials.

If you don't happen to have a good mental picture of five thousand different plant species (and believe it or not, someday you probably will), a bare list of names can seem impenetrable. To help out, the NARGS seed list includes some descriptive information for at least some entries. This information has been entered into the database over the years from many sources of various degrees of reliability, and it tends to pop out in places where it is not applicable, but it is useful to know the approximate height of a plant, and many people would prefer a pink-flowered plant over a white-flowered one. It's also good to be warned that a species is annual (by the letter "A") or biennial ("Bi"); it keeps you from ordering the little annual androsaces (charming though they are) when what you want is perfect perennial cushions. The other society lists do not have this feature.

Some years ago the late Bernard Harkness addressed this problem by compiling *The Harkness Seedlist Handbook*, which went through several editions. It lists in very brief form such information as size, flower color, and origin for a great many species that have appeared in seed lists. Even the most recent edition contains numerous errors, however. Similar information has been compiled in the database from which the annual NARGS seed list is created. Seed exchange manager Tom Stuart reports that the database will become available on the World Wide Web in winter

2001, and a task force of NARGS members led by Loren Russell will work on correcting, expanding, and updating it. This promises to become an invaluable resource for those with Internet access.

More traditional resources, however, are likely to be needed for many years to come. If your library budget is up to it, the *Alpine Garden Society Encyclopaedia of Alpines* (Alpine Garden Society, 1993) is a reliable guide. Another helpful work, and much more affordable, is Baldassare Mineo's well-illustrated *Rock Garden Plants: A Color Encyclopedia* (Timber Press, 2000). Both these books are good sources of items for the wish list, too.

## Wild-collected seeds

The major society seed lists are divided into garden-collected and wild-collected sections. Serious collectors often turn immediately to the wild-collected list to search for well-documented collections that will produce plants of the "true" species, especially in the case of genera whose species hybridize freely in cultivation. Sometimes wild-collected seed germinates better than seed of the same species from gardens, perhaps because the conditions for pollination, fertilization, and ripening are better in the plant's native habitat. However, the donor collecting seed in her garden is better able to harvest it at the proper stage, whereas the visitor to a remote area may obtain immature seed. Another problem with collecting seed in the wild is that it may be damaged by insect pests which infest wild populations but which do not occur in far-away gardens.

At this writing, there is a controversy about whether to identify the origins of wild-collected seed. The Alpine Garden Society decided not to do so in their 2000 list because of potential legal problems associated with conservation regulations; NARGS continued to list the sites reported by donors. Knowing a plant's native habitat is helpful for deciding how to grow it, but this information is available for most plants in sources outside the seed lists. There is inevitably a certain degree of romance associated with, for example, a plant of *Gentiana acaulis* whose parents grew in a meadow in the Alps; however, it is likely to be no more beautiful—and less well adapted to cultivation—than one twenty generations removed from its native home.

## The "Lucky Dip"

If your member's or donor's share doesn't satisfy you, you have another chance to get NARGS seed at the end of the shipping period, when the leftovers are packaged up and sent to the regional chapters. The distribution is random and may arrive as a chaotic heap. Usually some saintly chapter member sorts it, bundles the duplicates, marks a spare catalog, or even writes the names on the packets (thereby accruing dionysias in Heaven). You are unlikely to find any real wonders in the leftovers, but be aware that seed which arrives too late to list sometimes finds its way here, and it may be very choice indeed. At the least, this is a good source of everyday plants to fill out the border. There are always surpluses of plants with easy-to-har-



vest seed, and some of these—for example, *Pulsatilla* and *Cardiocrinum*—are quite desirable.

The leftovers inevitably include weeds, too. Beware of planting anything with an unfamiliar botanical name until you've looked it up. Seed exchange managers try to eliminate federally listed noxious weeds—and it's surprising how many donors send them in—but state listed weeds may slip by. Donors often contribute "road-side wildflowers" which they admire, but which are likely to become awful pests in the garden.

## On beyond NARGS

In the back pages of every issue of the *Quarterly*, you can find invitations to join other rock garden societies in other parts of the world. They, too, have seed exchanges (as well as excellent journals), and as in NARGS, overseas members usually need not pay fees for their seeds beyond their annual membership.

The exchange of England's Alpine Garden Society (AGS) sometimes features large collections of seed from AGS-sponsored expeditions; for example, plants with ACE collector numbers descend from collections made by the AGS China Expedition in the early 1990s. The Scottish Rock Garden Club's list reflects the legendary skills of that country's gardeners and is particularly rich in *Primula*, *Meconopsis*, and other plants that love cool, moist climates. The New Zealand Alpine Garden Society is one source for the remarkable endemics of those mountainous islands.

The AGS and SRGC both offer random distributions of surplus seed for a small charge. The leftovers are not likely to thrill you; the year one of the compilers tried this, she got shrubs, annuals, weeds, and dull border plants.

Enthusiasts of particular genera or families of plants may find seed lists available from specialist organizations such as the American Primrose Society, American Dianthus Society, or American Rhododendron Society. The International Bulb Society operates an exchange for both seeds and bulbs, mostly of nonhardy species. These lists tend to be heavy on hybrids.

## Botanic Gardens

Most botanic gardens send annual seed lists (usually Latin-titled "Index Seminum") to other gardens around the world to facilitate exchanges. Volunteers and financial supporters of the gardens often have the privilege of ordering seed from these lists as well. Publishing a list of botanic gardens is beyond the scope of this article, but a Web search will disclose many potential addresses.

## Commercial Seed Lists

Commercial seed lists offer much more help to the buyer in terms of descriptions and cultural information. There are encyclopedic catalogs ranging from orchids to tomatoes; the best-known are Park's and Thompson & Morgan, but the best is

Chilterns, which includes many unusual species suitable for the rock garden (and is a great read, too).

A fixture of the rock-gardening world is the collector's list. These catalogs are issued by plant explorers who may collect all the seeds in the wild, harvest them from carefully pollinated cultivated plants, or both. These experienced workers usually specialize in a particular region. They are skilled in identification and seed cleaning and storage, and their lists usually describe the conditions where the plants grow and may give hints on their cultivation. Some advertise regularly in the *Quarterly* and *AGS Bulletin*. A list of currently active suppliers is appended to this article.

The big gun of collectors' lists is that of Jim and Jenny Archibald, who have spent decades building up their seed bank and nursery collection in Wales. They issue several lists a year featuring both home-grown seed from their earlier introductions and seed collected in the wild by themselves and other experienced plant-hunters. Their lists are particularly rich in bulbous plants.

Botanists and rock gardeners from the Czech Republic began to issue seed lists before the fall of the Soviet Union, when they were able to travel freely into remote areas behind the Iron Curtain. They continue to offer otherwise unobtainable material from the Caucasus, Balkans, Central Asia, and Siberia, where they often endure great hardship and personal risk on their expeditions. Josef Halda is perhaps the best-known Czech seedsman and has introduced many species to cultivation, some of which he was the first botanist to describe. Mojmir Pavelka's Euro-seeds list is another favorite of many gardeners, as is CKS. Other Czech collectors offer their seeds annually through Andrew Osyany's Karmic Exotix list; both the catalog and the seeds are mailed from Canada, eliminating the difficulties of sending payment to the Czech Republic. Some of these collectors participate in joint expeditions, so it is worth comparison-shopping among their lists; the same plant from the same site may be priced differently. The buyer should also be aware that some of the plant names come from Russian floras and differ from those names used for the same plants in Europe and the United States; for example, *Chamaenerion latifolium* is the familiar circumpolar *Epilobium latifolium* (dwarf fireweed).

Collectors' lists may concentrate on specific areas with rich flora. John Watson and Anita Flores de Watson collect seeds in Chile and adjacent South American regions. Their sporadically issued list and the seeds are distributed by a colleague in England, M. J. Cheese. Like the Karmic Exotix arrangement, this circumvents currency and mail problems. In South Africa, Rod and Rachel Saunders operate Silverhill Seeds, which supplies more than 2,000 species from that floral wonderland. Chris Chadwell has been collecting in the Himalayas for many years and offers a newsletter as well as seeds. From Southern Seeds in New Zealand's South Island to botanist Alexandra Berkutenko in eastern Siberia, specialists labor to gather and distribute native seeds.

Within North America, the premier collector's list is Ron Ratko's Northwest Native Seeds; originally focused on the Pacific Northwest, it now features an annually changing array from many parts of the West. Enthusiasts treasure it for its detailed plant and habitat descriptions. Two catalogs concentrate on the northern and central Rocky Mountains: Alplains and Rocky Mountain Rare Plants. Both



offer nursery-grown as well as wild-collected seed. From the desert Southwest comes Sally Walker's Southwest Native Seeds; her famously condensed list holds many remarkable items. Phyllis Gustafson's Rogue House Seeds is a small but choice selection from the Siskiyou Mountains on the Oregon-California border. The wildflowers of the northern Great Plains, little known in gardens, are obtainable from Seeds of the Plains.

Several lists specialize in bulbs. The Archibalds' list is mentioned above. Two English bulb nurseries issue both bulb and seed catalogs. Potterton & Martin have rock garden perennials as well as bulbs on their seed list. Mike Salmon's Monocot Nursery specializes in Mediterranean bulbs, many originating from his own expeditions over the years; this is one of the few sources for bulbous species native to North Africa, Jordan, and Israel.

Some suppliers outside the United States accept U.S. checks adding a small surcharge for bank processing; those in the Czech Republic and Russia may specify cash or international money orders, especially for orders under \$100. Few in North America or elsewhere accept credit cards. Because most seeds are available in small quantities, it is wise to order immediately after the catalogs arrive and to send in your order by some speedy means, such as Global Priority Mail. It's also advisable to list an ample number of acceptable substitutes.

Most seed lists are prepared and mailed in late fall or early winter. By the time you read this, it will be too late to obtain the year 2000 lists from societies, but private suppliers may still have stock on hand. Most of the latter send out free catalogs automatically to those who purchased seed the previous year, but first-time customers must pay for them.

## Sources

The following list is divided into noncommercial and commercial sections. It is not complete—experienced seed-sowers are likely to have favorites that don't appear here—but it is a good start on a lifetime of gardening adventures. Note that some suppliers outside the U.S. require payment for catalogs in currency or in International Reply Coupons (IRCs), which can be purchased at post offices.

### ***Rock garden societies with seed exchanges***

North American Rock Garden Society  
Executive Secretary  
P.O. Box 67  
Millwood, NY 10546  
*dues \$25/year U.S. and Canada, \$30/year overseas; seed list sent automatically to all members.*

Alpine Garden Society  
AGS Centre  
Avon Bank  
Pershore, Worcs. WR10 3JP  
U.K.  
*dues U.S.\$34/year; nondonors must request seed list from a separate address published in the newsletter enclosed with journal.*



Scottish Rock Garden Club  
Membership Secretary  
Harrylayock, Solsgirth  
Dollar, Clackmannshire FK14 7NE  
Scotland, U.K.

*dues U.S. \$25/year; seed list sent  
automatically to all members.*

New Zealand Alpine Garden Society  
P.O. Box 2984  
Christchurch  
New Zealand

*dues N.Z. \$30/year, payable by credit card;  
seed list sent automatically.*

### ***Other societies of interest***

American Primrose Society  
Fred Graff, Treasurer  
2630 W. Viewmont Way W.  
Seattle, WA 98199  
*dues U.S. \$20/year*

American Rhododendron Society  
Dee Daneri, Executive Director  
11 Pinecrest Drive  
Fortuna, CA 95540  
[www.rhododendron.org](http://www.rhododendron.org)  
*dues U.S. \$28/year*

Cyclamen Society  
Vic Aspland, Publicity Officer  
27 Osmaston Road  
Norton, Stourbridge  
West Midlands DY8 2AL  
U.K.  
*overseas dues £9.00/year.*

International Bulb Society  
Dave Lehmiiller, Membership  
550 IH-10 South #201  
Beaumont, TX 77707  
[IBSMEM@aol.com](mailto:IBSMEM@aol.com)  
*dues U.S. \$30/year*

North American Dianthus Society  
Rand B. Lee  
P.O. Box 22232  
Santa Fe, NM 87502-2232  
*inquire regarding dues*

Theodore Payne Foundation  
10459 Tuxford St.  
Sun Valley, CA 91352  
*inquire regarding lists*

### ***Commercial seed lists***

Alplains  
P.O. Box 489  
Kiowa, CO 80117-0489  
*catalog U.S. \$2.00*

Jim and Jenny Archibald  
'Bryn Collen'  
Ffostrasol, Llandysul  
Dyfed SA 44 5SB  
Wales, U.K.  
*catalog free*

Dr. A. Berkutenko  
P.O. Box 225  
Magadan 685 000  
Russia  
[http://web.ukonline.co.uk/alpines/  
seedlist.htm](http://web.ukonline.co.uk/alpines/seedlist.htm)  
*catalog U.S. \$2.00 (currency)*

Chris Chadwell  
81 Parlaunt Road  
Slough, Berks. SL3 8BE  
U.K.  
*catalog U.S. \$3.00 or 3 International Reply  
Coupons*

Chiltern Seeds  
Bortree Stile  
Ulverston  
Cumbria LA12 7PB  
U.K.  
[www.chilternseeds.co.uk](http://www.chilternseeds.co.uk)  
*catalog free*

CKS  
Box 74  
708 00 Ostrava-Poruba  
Czech Republic  
*catalog U.S. \$2.00 (currency)*

Euroseeds  
Mojmir Pavelka  
P.O. Box 95  
741 01 Novy Jicin  
Czech Republic  
*catalog U.S. \$2.00 (currency or I.M.O.)*

Flores & Watson Seeds  
c/o M. J. Cheese  
Silvercove  
Lee Downs, Ilfracombe  
North Devon EX34 8LR  
U.K.  
*catalog price not known*

Josef J. Halda  
Box 110  
501 01 Hradec Kralove 2  
Czech Republic  
*catalog U.S. \$3.00 (currency)*

Karmic Exotix Nursery  
Box 146  
Shelburne, Ont. L0N 1S0  
Canada  
*catalog U.S./Can. \$2.00*

Josef Jurasek  
P.O. Box 251  
152 00 Praha 5  
Czech Republic  
*catalog U.S. \$2.00 (currency)*

Monocot Nursery  
St. Michaels  
Littleton, Somerton  
Somerset TA11 6NT  
U.K.  
*catalog price unknown; send 3 IRC's*

Northwest Native Seed  
Ron Ratko  
17595 Vierra Canyon Road #172  
Prunedale, CA 98907  
*catalog U.S. \$3.00*

Potterton & Martin  
Moortown Road  
Nettleton, Caistor  
Lincoln LN7 6HX  
U.K.  
*Bulb catalog and seed list (request the latter) U.S. \$3.00*

Rocky Mountain Rare Plants  
1706 Deerpath Road  
Franktown, CO 80116  
[www.rmrp.com](http://www.rmrp.com)  
*catalog free*

Rogue House Seed  
Phyllis Gustafson  
250 Maple St.  
Central Point, OR 97502  
*catalog U.S. \$1.00*

Silverhill Seeds  
P. O. Box 53108  
7745 Cape Town  
South Africa  
[www.silverhillseeds.co.za](http://www.silverhillseeds.co.za)  
*catalog U.S. \$2.00 (currency)*

Seeds of the Plains  
HC 76, Box 21  
Belvidere, SD 57521  
*catalog U.S. \$1.00*

Seedhunt  
P.O. Box 96  
Freedom, CA 95019-0096  
[www.seedhunt.com](http://www.seedhunt.com)  
*catalog U.S. \$1.00*

Southwestern Native Seeds  
Box 50503  
Tucson, AZ 85703  
*catalog price not known*

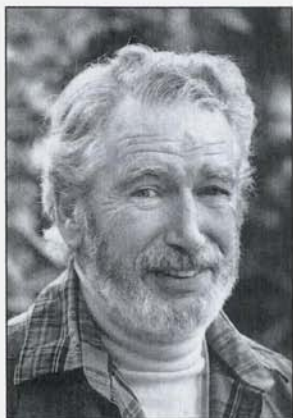
Southern Seeds  
The Vicarage  
Sheffield, Canterbury  
New Zealand  
[e.paterson@ext.canterbury.ac.nz](mailto:e.paterson@ext.canterbury.ac.nz)  
*catalog and newsletter probably U.S. \$3.00*



## B. LeRoy Davidson

Roy Davidson, a founding member of the NARGS Northwestern Chapter and a cherished friend of plant-lovers throughout the world, died in Bellevue, Washington on November 28, 2000, after a brief illness. He was 83 years old. Preceded in death by three brothers, Roy is survived by his sister Sybl, three grandnieces, a nephew, and his life partner of 58 years, Ferdinand Minici.

Roy was born in Kendrick, Idaho, on January 15, 1918, to Byard Wilbur Davidson and Amy Keith Davidson. When he was about one year old, his parents moved to his mother's family farm in the Palouse country near Colton in southeastern Washington. As he grew up on the "breaks" of the Snake River, Roy's passion for plants was inspired by the rich prairie wildflowers and by his parents' love of gardening. As a youth, he spent much of his time helping his father grow vegetables and tending his mother's flower gardens.



B. LeRoy Davidson  
Photo by George Waters

Roy studied botany at Washington State University from 1935 to 1939 and shortly thereafter moved to the Seattle area, where he pursued a successful career as a florist and horticulturist. A prolific writer, he will be best remembered for *Lewisia*, a history of the discovery and cultivation of that genus, published by Timber Press in 2000. In addition, he wrote more than 65 articles for the NARGS *Bulletin/Quarterly* over the years and made numerous contributions to other horticultural journals.

In addition to his active work with the Northwestern Chapter, Roy instigated the organization of the Rocky Mountain Chapter of NARGS in 1976. Many horticultural societies and organizations enjoyed his active and devoted membership, including the Alpine Garden Society, Scottish Rock Garden Club, American Penstemon Society, and American Iris Society; for the last, he was the first chairperson of the Species Iris Study Group (SIGNA), guiding it from 1968 to 1978. He was also an originator of the NARGS Western Study Weekends, beginning in 1974. In recognition of his

contributions, Roy received both the Marcel LePiniec Award (1972) and the Marvin Black Award (1992), as well as a NARGS Chapter Service Award.

Roy was responsible for many plant introductions. Plants that bear his name include *Iris pseudacorus* 'Roy Davidson', *Pulmonaria* 'Roy Davidson', and *Lewisia cotyledon* var. *fimbriata* 'Roy Davidson'.

"He loved to show up unexpectedly (often when we staged some sort of event) and I would find him pitching in, sweeping the alpine house, or straightening labels—seeing to something that needed to be done," recalls Panayoti Kelaidis, curator of the Denver Botanic Garden. "I will treasure the too few hikes and moments I shared with Roy to the end of my life. It will never be hard for me to summon his memory and feel his shade alongside me when I hike the rugged Western landscape where we have been blessed to spend our lives. Roy has left an enormous legacy: he tended and befriended a network of talented gardeners; he built a home and garden with Ferd of enormous elegance and grandeur; he was one of America's greatest plant explorers and boon companions; he helped inspire and forge the Bellevue Botanic Gardens and the thriving community of plantsmen in the Puget Sound area; and his flinty prose filled the bulletins of NARGS, SIGNA and the Penstemon Society with a treasury of wisdom."

Traveling and exploring with Roy was like having a walking, talking Encyclopedia and World Atlas in hand at once as he imparted his exhaustive knowledge of plants, their natural history, and the geography of their habitats. Many of us will long cherish memories of him hiking through the mountains he loved, walking stick in hand, his keen eyes scrutinizing the alpine landscape about him, not missing one detail.

Sean Hogan remembers: "In the early 1980s when I first met Roy, we were both in pursuit of lewisias. Our first trip into the wild together was to see a newly discovered colony of *Lewisia serrata*. One moment we were chatting and maneuvering along cliffs hundreds of feet above the turbulent Yuba River. At the next, Roy was gone! I looked everywhere. There were only so many places to go on a knife-edge ridge where everything was vertical face or stacked rubble, with only a canyon oak or two to hang onto. After I'd searched for several hours and couldn't bear looking over another cliff, Roy emerged—covered with red dust, clutching numerous leaves and flowers to be identified later, and proclaiming it was time for ice cream.

"It was only the first of many adventures throughout the West looking for plants—and often for Roy. Slowly I came to realize just some of what he had accomplished: so many superb plant selections, so many gardens ahead of their time, and such vast sums of quiet encouragement. He had a great knowledge of place and could piece back every pebble and plant, surmising the hows and whats of each plant's path to the present.

"He told stories in great detail—enough that I could see the place and time as if there, and with enough humor that I wasn't in any hurry to leave that place. I'm still not ready to leave. I'll be looking for a while longer, ready for ice cream."

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Micheal Moshier, Sean Hogan, and Panayoti Kelaidis contributed to this article.

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# Plant Portraits

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## *Phlox* 'Sileneflora'

It is no surprise that most "traditional" rock and alpine plants are challenging in the South. The combination of summer heat and relentless humidity for which our region is known is simply more than most high-altitude plants can handle. As a result, a rock garden in the South is usually a relaxed affair which merely emphasizes shorter plants, rather than the stereotypical "bun and cushion" plants one ordinarily associates with rock gardens. However, one plant that would fit anyone's conception of a rock plant, and that also grows well in North Carolina, is *Phlox* 'Sileneflora'.

Named for its floral resemblance to that esteemed rock plant *Silene acaulis*, *Phlox* "Sileneflora" was discovered in the garden of Lincoln Foster. Believed to be a hybrid between *Phlox subulata* and another species, it bears little resemblance to even the finest forms of the familiar "moss pink." The plant forms a tight, almost hard cushion of dark green, tightly spaced, angular, rather scale-like leaves; it cries out to be touched or patted. I've never read an estimate of mature size, but my largest plant after five years is only 7 inches wide by a little over 1 inch tall. A scatter of pale pink, starry flowers is produced above the foliage in mid spring. The display pales in comparison to its *subulata* parent, but the plant would be worth growing, even if it never produced a single blossom.

Cultivation seems fairly straightforward, seemingly no more difficult than that of *P. subulata*. I have two plants growing in different conditions, and both have done splendidly since the day they were planted. One grows in a trough, in a gritty, spartan mix in full sun. The other grows in the ground, in a partially shaded site with moister, acid soil. Plants in both areas seem to do equally well in terms of growth; predictably, the one in full sun blooms a bit more. Neither plant has ever experienced any dieback, even in our wettest summer periods.

Since the plant grows rather slowly, it is not something you'll be able to pick up at the local Home Depot. I've had it from the two specialty mail-order nurseries listed below.

Mike Chelednik  
Greenville, North Carolina



## Sources

Mt. Tahoma Nursery, 28111 112th Avenue E., Graham, WA 98338; catalog \$2  
Arrowhead Alpines, PO Box 857, Fowlerville, MI 48836; catalog \$2

## The Oxblood Lily: *Rhodophiala bifida*

Many of the most dependable and long-lived bulbs for gardens in the South bloom from late summer through early fall: *Lycoris radiata* (the red spider lily), *Zephyranthes candida*, sternbergias, *Crocus speciosus*, and colchicums. Another equally good though less-known plant is the oxblood lily, *Rhodophiala bifida*.

A member of the Amaryllidaceae, *Rhodophiala bifida* blooms in my garden for about a month beginning in mid-August. This timing has earned it the colorful appellation "hurricane lily," at least along the Texas Gulf coast. Deep crimson flowers are borne in clusters of four or five atop scapes that usually remain under a foot tall. The individual flowers are basically trumpet-shaped, crimson within, and a slightly duller shade without. There is a central boss of golden-yellow anthers that contrasts vividly with the red of the tepals. The narrow, unobtrusive foliage comes up shortly after the flowers finish and remains evergreen through the winter, finally dying down in late spring.

Vigor and ease of culture are this plant's two strongest selling points. Culture could not be simpler: plants multiply rapidly regardless of soil condition, provided the medium is reasonably well drained and they receive at least a half-day of sun. Their low stature makes them a superb choice for the front of the border. Propagation is by division, which is best done as plants are going dormant in late spring to early summer. Seeds are not produced, because (as with the red spider lily) the form in cultivation is a sterile polyploid. Seeds of the wild species are sometimes available from South America (the plant is native to Argentina and Uruguay), and these should be sought out; in the wild, flower color varies from pink through different shades of red to orange. Bulbs are slow from seed, however, and lack the vigor of the common selection. It takes four or five years from germination to flowering.

Although the oxblood lily has been grown in North Carolina for almost a century (it was a great favorite of Elizabeth Lawrence), it is not the easiest plant to find. Traditionally it's been a "pass-along" plant—passed over the garden fence from one enthusiast to another. Fortunately, in recent years, as the plants' value has become known, they have become available from a few specialty mail-order nurseries (listed below). I urge you to try growing the oxblood lily; few plants I know give so much, yet ask so little.

Mike Chelednik  
Greenville, North Carolina

## Sources

Brent & Becky's Bulbs, 7463 Heath Trail, Gloucester, VA 23061  
Old House Garden Bulbs, 536 Third St., Ann Arbor, MI 48103-4957  
Plant Delights Nursery, 9241 Sauls Road, Raleigh, NC 27603  
Yucca Do Nursery, Rt. 3, Box 104, Hempstead, TX 77445

## *Rhododendron camtschaticum*

After a first look at this rarely grown, dwarf, deciduous shrub, you might have a hard time deciding what genus it belongs to—though *Rhododendron* would surely come to mind. This very curious and beautiful rhododendron has obovate leaves with bristly margins and leafs out perilously early, if it is being grown in a place prone to late frost. The plants in my garden are nearly prostrate, rising no higher than about 7cm (3 in.) and forming a mat about 50cm (20 in.) across after more than 20 years. It is mildly stoloniferous, a strange habit for a rhododendron. A bonus is its good fall foliage color in shades of orange, red, and clear yellow.

Plants with no flower buds apparent in fall shock and confound us with an eruption of bloom the following spring. The clever buds were there all along, neatly tucked away inside the woody stems and embedded in spring's first green shoots. The flowers, flat and as much as 5 cm (2 in.) across, are reminiscent of pansies, dancing above the mat on stout little pedicels—quite a magical effect.

*The Encyclopedia of Rhododendron Species* by Peter A. Cox and Kenneth N.E. Cox shows some nice forms. The typical color is purplish pink, but the Coxes at Glen-doick Gardens in Perth, Scotland, and the Danes—those superb growers of everything difficult or rare—have selected good dark purple, clear pink, and red forms. These we have acquired and are slowly getting established. The extremely rare white form has been lost here on three occasions by both myself and Walter Ostrom. Kind souls have given us more plants, and we will certainly not be repeating our previous mistakes.

Walter's garden near Peggy's Cove, Nova Scotia, probably provides the closest thing to perfect conditions for this maritime species: cool foggy summers, absence of damaging late frosts, and plenty of wind. In a peat bed heavily laced with sharp masonry sand and mulched with granite gravel, it grows lustily and even seeds itself about. Miraculously, several white seedlings appeared in his beds, though they too parted company after unfortunately drying out.

This species cannot tolerate extended periods of hot, humid weather, or dryness combined with blistering sunshine. The white form—the very mention of which causes involuntary nail-biting—is even less tolerant. (If you want a real challenge, try its close relative *R. redowskianum*, reminiscent of clouds of tiny butterflies, a humbling plant for those with delusions of lofty plantsmanship.)

*Rhododendron camtschaticum* is placed in subgenus *Therorhodion*. It is bone hardy, as one would expect of a native to chilly coastal regions in northern Japan, Sakhalin, Kamchatka, the shores of the Sea of Okhotsk, the Kurile and Aleutian Islands, and Alaska. In the wild, it grows in gravelly, peaty soils and seems happiest where moisture and organic matter collects at the base of cliffs, though its soil must never be stagnant. If you have a nice cool but sunny spot in a peaty section of the rock garden, you may find it rewarding indeed.

John Weagle  
Halifax, Nova Scotia



## *Hypericum empetrifolium* var. *prostratum*

This Greek hypericum (St. John's wort) is a completely flat, slow-growing shrub that follows the contours of the rocks below it. It likes a well-drained soil in an exposed position and can cover itself with small yellow flowers from May until October. I write from my experiences with the plant in a Midland garden and a cold wet East Anglian garden, both in England.

Sampson Clay in *The Present Day Rock Garden* called this plant a "flop," but you can be assured that he was referring to its delightful habit of meandering around scree and boulders (and the ancient ruins of Athens) and then flopping down the face of a rock. There it spreads a film of tiny, bright green, opposite leaves and gnarled brown stems. The profuse yellow flowers during its first flowering in May, and then on into the autumn, are perfect miniatures of those of the "rose of Sharon" (*Hypericum calycinum*).

The genus *Hypericum* is part of the family Guttiferae, which also contains tropical shrubs and trees providing timber, medicines, and dyes. *Hypericum* species are centered on the northern and eastern Mediterranean and east into Asia. It is perhaps this distribution that leads many authors to warn about the tenderness of the smaller species of *Hypericum*, especially those from Greece and Turkey. It may be that collections from higher altitudes have given us tougher forms, though.

*Hypericum empetrifolium* has been known since 1788. It grows like a heather (or, of course, like *Empetrum*, the crowberry), becoming untidy and leggy unless cut back. But variety *prostratum* (syn. var. *oliganthum*) is a gem, in an entirely different class. Many authors refer to the plant as "very desirable," and I can vouch for this on many counts: it is completely prostrate and slow-growing; it is long-flowering and attractive; it has very few pests or diseases; and it occasionally self-sows. The last trait is handy because the plants resent being moved, and I believe that self-sowing and subsequent natural selection may have created hardier strains.

On the matter of hardiness, I garden in UK Zone 7-8 (minimum winter temperatures between 0° and 20° F) with practically no snow cover. I suspect that this hypericum's prostrate habit helps it survive the cold winter winds that might kill more upright plants. I grow it in an east-facing garden (the cold, dry winter winds come from the east), but it is happier in a more exposed west-facing wall.

*Hypericum empetrifolium* var. *prostratum* has deep, branchlike roots similar to those of a rose bush, with few fibrous roots. For this reason, it resents being moved, and it is best to watch for self-sown seedlings or to take a few cuttings each year to overwinter in a frame. Young plants are easy to transplant. However hard I try, I have not managed to grow this as a pot plant for the show bench. It always becomes angular and never looks quite right in a pot.

I first came across this little treasure in a wonderful nursery tucked away on the west side of the English Malvern Hills in the little village of Colwall. The owner, Percy Picton, rather reluctantly found a plant for me but stressed that it was tender; he grew his main plant in a raised bed built inside an alpine house. I noticed on one of my later visits that this wooden structure had collapsed and been removed, leaving a waist-high double raised bed where the little hypericum continued to grow happily. Either our winters have become warmer, or I have a hardier self-seeded



strain. Whatever the reason, I have grown this plant in several locations for more than 20 years.

If you would like to try it, check the seed lists; it is rarely offered by nurseries, and as a rooted cutting in a pot it doesn't look very attractive. If you do chance upon one, be strong and buy it; plant it, and after its ugly duckling phase is over, it will settle in and become a charming addition to your raised bed.

Rick Lambert  
Northamptonshire, England

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# Books

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***The Plantfinder's Guide to Garden Ferns***, by Martin Rickard. 2000. Portland, OR: Timber Press. 192 pages, 121 color photographs, 20 line drawings, 7" × 10.25", hardcover. ISBN 0-88192-476-8. Price: \$34.95, discount through NARGS Book Service.

Martin Rickard's outstanding new book offers the gardener—whether neophyte or devoted expert—a well-informed and beautifully illustrated encyclopedic guide to the cultivation and identification of hardy ferns. The book draws on Rickard's years of research and extensive experience as a propagator and observant gardener at his nursery, Rickard's Hardy Ferns—one of Britain's finest—at Kyre Park.

Rickard, the current president of the British Pteridological Society, served for many years as editor of their horticulturally oriented journal, *The Pteridologist*. His attention to detail and his editing skills are evident in the book's crisp and informative text. In addition, the illustrations—especially the 13 magnificent color plates—make this one of the finest books ever published on ferns.

The introductory chapters on botany, history, and uses of ferns are well illustrated and invite the reader to plunge onward. The compelling virtue of the book, however, is in the A-Z descriptive accounts of temperate fern species hybrids and cultivars, ranging from USDA Zone 3 stalwarts to (stretching the subject field a bit) Zone 9 tree ferns.

Five important pages provide an introduction to the A-Z descriptions. They include zone maps for both North America and Europe, welcome observations on the problems of current requirements for the naming of cultivars, and an extremely useful classification scheme to define differences among cultivars. The last are also well illustrated in a number of the plates.

Rickard's entries bring the reader up to date on current introductions, with information that would not otherwise be available without access to a major library and perhaps a translator. A number of the ferns described are new to the horticultural and botanical community, thanks to Rickard's association with twentieth-century plant explorer Christopher Fraser-Jenkins, who has spent years in worldwide pursuit and study of ferns and is responsible for many new introductions.

I was delighted with Rickard's rational and cautious approach to accepting revised botanical names (and was especially pleased to see him retaining *Adiantum*

*aleuticum* 'Subpumilum' and *Asplenium viride*). Although I have no problem with botanical correctness, I do think restraints on the see-saw effects of changes and revisions are most welcome.

Britain's climate is basically comparable with USDA Zones 8 and 9. Since that is the area of Rickard's experience, he is understandably conservative ("at best a rough guide") in his zonal parameters. Happily, there are many ferns that are more cold-tolerant than he states, and I encourage the reader to experiment.

Rickard and I part company in a few areas, the most significant of which is in the treatment of *Dryopteris erythrosora*. As he notes, there is a tremendous need for clarification within the complexities and extremes of this species. However, I disagree with his statement, "There is possibly a complex of species in cultivation under this name (for example, *D. championii*, *D. cystolepidota*, *D. fuscipes*, *D. gymnosora*, *D. purpurella*)." The species grown in North American gardens under these names are indeed distinct in many ways. Furthermore, our plants of *Dryopteris erythrosora* var. *prolifera* and *D. koidzumiana* are not identical. Future research on this popular species will be welcome indeed.

Many of the more than 700 ferns described are appropriate for rock garden cultivation, but deciding which ones to mention is truly an invitation to a muddle. Trying to choose a few, I remembered England's Sizergh Castle and its magnificent rock garden, where giant specimens of *Osmunda* are perfectly in scale in the imposing setting. Therefore, *all* the plants in the directory are suitable for "rock gardens"—provided you have a big enough one! That said, I can assure those who prefer to complement rock garden flowers with rock garden greenery that there are many diminutive plants listed, especially among the species of *Asplenium* and *Cheilanthes*.

Fern lovers and would-be enthusiasts went for years with little support in garden-oriented horticultural literature. This all changed with the welcome publication of Reginald Kaye's *Hardy Ferns* in 1968, and, much later, David Jones's *Encyclopaedia of Ferns* and John Mickel's *Ferns for American Gardens*. Now we have Martin Rickard, whose fern displays have consistently won gold medals at the prestigious shows of the Royal Horticultural Society at Chelsea and Hampton Court. Were there a classification for book awards at these events, I'm certain that *The Plantfinder's Guide to Garden Ferns* would bring its author yet another medal. It is a highly recommended visual delight and a treasure trove of up-to-date information.

Sue Olsen  
Bellevue, Washington



***The New England Wild Flower Society Guide to Growing and Propagating Wildflowers of the United States and Canada.*** By William Cullina. 2000.

Houghton Mifflin, New York. 322 pp. ISBN 0-395-96609-4. Price: \$40; discount through NARGS Book Service.

This wonderful new book has been written by a young author who knows and loves plants and has years of experience in growing and propagating native species. It is my favorite kind of book—one that features personal experiences and observations. Cullina is a propagator and nursery manager at the Garden in the Woods in Framingham, Massachusetts.

This is a hefty volume, with good color photographs and coverage of about 200 genera. The plant descriptions include cultural information based on the author's experience in Rhode Island, where I also garden. The species included, however, are drawn from all over North America, as is the plant collection at Garden in the Woods, and readers will find many plants and much information new to them. For example, the lupines along Maine roadsides are now dominated by hybrids; though both parents are American species, the admixture of genetic material from the introduced western species makes the plants unacceptable as food to a butterfly species that depends on the native *Lupinus perennis*. In another example, I can now stop looking for improvement each spring in my plants of *Jeffersonia diphylla*, since Cullina informs us that its flowers last only about one day. He points out, though, that the beautiful foliage of this plant is reason enough to grow it; and though the flower is short-lived, a seed pod is almost always produced and is fascinating to watch develop (as it approaches maturity, it looks somewhat like a garbage can with a hinged and handled lid).

Propagation specifics for each genus are covered in a section at the end of the book. This is preceded by a chapter with ample detail about raising the plants from seed. This book is going to be my first resource on propagating wildflowers from now on.

Dorothy G. Swift  
Wickford, Rhode Island

## From the Editor

When I joined NARGS—then the American Rock Garden Society—in 1977, the society's journal was called the *Bulletin* and was edited by Laura Louise “Timmy” Foster, a gardener, writer, and botanical artist in New England whose style and associates contributed much to forming the vision of the society in that decade. For the past ten years, the journal now called the *Rock Garden Quarterly* has been edited by Gwen Kelaidis of Denver, gardener, botanist, writer, and photographer; she, too, has greatly influenced what American rock gardeners know and how American rock gardening is perceived worldwide. Gwen has elevated both the visual and informational standards of the *Quarterly* tremendously, and it is with gratitude to her that I accept the task of continuing to inform and inspire NARGS members.

The editor of a journal that depends on volunteer authors who need not “publish or perish” struggles constantly to elicit material. Throughout the *Bulletin/Quarterly*'s history, the copy gap has usually been filled by the editor, the editor's close friends, or the editor's husband. The present issue is a case in point; readers who dislike my prose are strongly encouraged to replace it with their own.

I intend to continue many of the departments and features Gwen instituted, including cover artwork, Plant Portraits, book reviews, the new series “Rock Gardens of North America,” and the annual special issue on the region of the next annual meeting. The special issues Gwen edited on topics such as troughs are treasured on members' bookshelves, and I hope to develop more theme issues. One on small urban rock gardens is in the planning stage; if you have ideas for others, please let me know.

I would like to invite every member of NARGS to contribute to this journal. Feature-length articles are needed, but so are Plant Portraits, practical tips, and book reviews. If you would like to write up a garden for the private gardens series, please do so. I am, unfortunately, no photographer, so I hope those of you who are will help to fill the 16 color pages allotted to each issue (the present issue is short, and I apologize). Pen-and-ink plant drawings, too, are a wonderful addition to the text pages.

Rock gardeners are thinking gardeners. We devote ourselves not only to creating beauty but also to the challenge of growing new or difficult plants. Please consider putting your own thoughts on paper for your friends and colleagues. I have never visited a NARGS member's garden where I failed to see something novel and pleasing—some plant I hadn't considered before, some clever structure, some charming combination. And almost all of us visit plants in the wild and bring back exciting photographs that help viewers understand the plants' habitat preferences.

Please write, e-mail, or telephone me with your comments and ideas. This is your forum, and I hope to keep it a lively one.

Jane McGary  
jmcgary@teleport.com

## About the Cover Artist

The covers for the 2001 volume are from serigraphs (silkscreen prints) by Sue Allen of Brightwood, Oregon. Sue moved to Oregon in 1975 after earning a degree in architecture from The Cooper Union in New York City. At her home studio in the misty forest on the lower slope of Mount Hood, she creates a wide range of serigraphs and cards inspired by native plants, birds, and folk traditions. Her work is available at many Pacific Northwest shops and galleries and from Studio Ink, P.O. Box 8, Brightwood, OR 97011 ([studioinkprints@aol.com](mailto:studioinkprints@aol.com)).





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Vancouver Island Rock and Alpine Garden Society

<http://victoria.tc.ca/Recreation/VIRAGS/WWSW2001.html>

### ANNUAL MEETING

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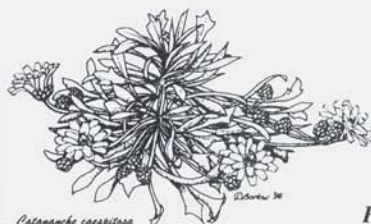
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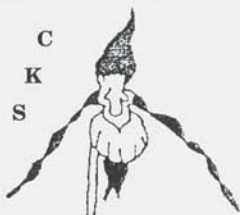


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