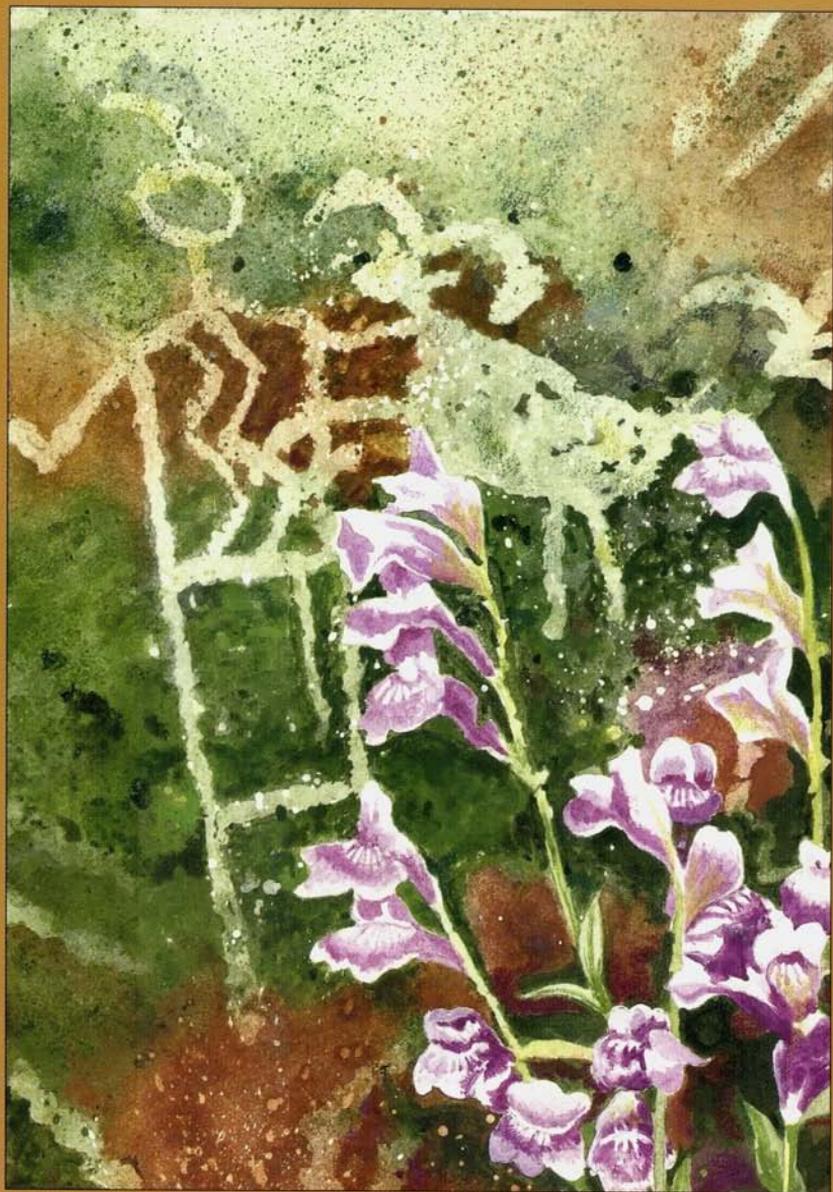


ROCK GARDEN *Quarterly*



Volume 61 Number 4

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Cover: *Penstemon cobaea* and Coso Native American petroglyphs. Painting by Carol McLoughlin Kortnik.

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ROCK GARDEN

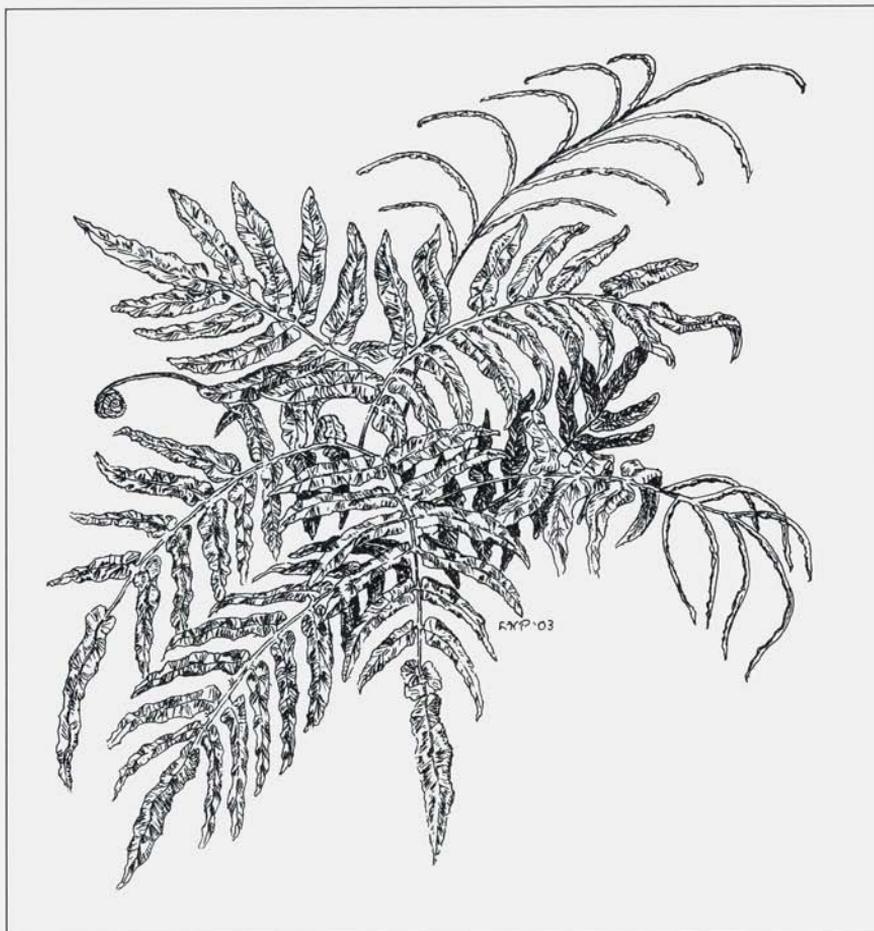
Quarterly

BULLETIN OF THE NORTH AMERICAN ROCK GARDEN SOCIETY

Volume 61 Number 4 Fall 2003

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Blechnum wattsii, drawing by Louise Parsons

A Fern Grotto

Louise Parsons

For years the old fish pond, created by the folks who built our house in 1929, had been too shady to support healthy pond life. It was a small pond, roughly 4 by 2 meters (12 by 6 feet) in extent. The sides had been built up with large, heavy chunks of solid basaltic andesite rock. Since the pond tended to collect needles from the Douglas firs and deodara cedars overhead, I had used it as a receptacle for compost. The “basement effect” quickly mellowed wonderful compost from the debris of our jungle-like yard. One side of the pond had nearly collapsed. Worst of all, I had allowed ivy to take over a berm beside it. Seeking less invasive plants to provide slope stability in the dry shade, I tried to replace the monster ivy with dwarf ivy. Not a success: the dwarf variety soon became too aggressive itself.

Now, however, I have discovered that a dense planting of easygoing smaller woodlanders suffices to hold the soil in place on the berm. My original idea was that the berm garden would have no summer water requirements, which limited the choice of plants; however, a little summer watering is preferable to cultivating the Ivy That Ate South Corvallis. (My pulaski, a firefighter’s tool with an adze-axe combination head, is a useful gardening tool in my temperate jungle—the tool for removing rampant ivy and blackberries.)

We take our best gardening cues from nature. I had noticed that ferns “self-spored” in both the duff from the trees and the rich, heavy native silt-loam in the rock crevices. Having succumbed to the fern craze, I built up the collapsing sides of the old pond, adding additional layers of rock and mortar. Some of the largest rocks already formed overhangs and a cavelike structure at the shady north-facing end, once refuges for fish. Now I enhanced them structurally and used them to create the relatively dry yet very cool niches that rock ferns require in our climate of heavy winter rainfall. In the 25 years that we have lived here, the ground has never frozen hard in this part of the garden. Light frost allows marginal fern species such as *Pellaea falcata* (sometimes sold as a house plant) to grow. If harder frost strikes, many of the marginally hardy ferns become deciduous; if growing conditions are otherwise suitable, they will produce abundant new fronds in spring and summer.

Gardening below grade

Overhanging mature conifers offer frost protection that augments the basement effect of the generous area of this feature that lies below ground level. Sunken gardens, made by excavating an area below grade and using the removed material to build up a protective surround, are a rock gardening tradition that is sometimes overlooked. Old foundations, well housings, and cisterns also make wonderful grotto features for ferns and mosses. (Remember, though, to consider the safety of children and garden visitors, and make sure no one will stumble unaware into a sunken area.) Alternatively, you can create a crescent-shaped “fern wall” such as the one that Virginia Sebring and the late Gene Sebring created in their splendid Oregon woodland garden. These work especially well in any climate with hot summers, or where you want a spot that mitigates both summer and winter extremes. One of the favorite gardens of my Pennsylvania childhood was built in an old concrete swimming pool—a fern haven even during the hottest days of summer. Conversely, the basement effect works well to protect new growth from hard spring frosts. I remember that this Pennsylvania grotto was always the best place to find the first bloom of trilliums and many other forest-floor dainties.

When you create any garden area below grade, you must pay good attention to drainage. Luckily for me, my pond drains into an old ditch that once drained the pasture surrounding our old, delightfully funky farmhouse. The ditch runs through a natural low area. However, the larger, also very old, sunken garden in our back yard suffered during floods in 1995, even though our basement remained dry. If you live in a climate with a season of heavy rainfall, you could use the simplest solution: create a bog or wet garden area to accommodate overflow. Loren Russell has done this to great effect in a boggy garden area that hosts plant gems such as hardy orchids and moisture-loving primula species (described in the new NARGS book *Rock Garden Design and Construction*).

Protective rock overhangs

You can use many techniques to create rock overhangs. Look for rocks that naturally have a curving or jutting shape. Examine them carefully to be sure that there isn't a fracture, seam, or other area of structural weakness. Rocks with protrusions may break later at those points. Large, flat rocks sandwiched firmly between heavy rocks for stability also make good overhangs. With great care, you can also set rocks in a staggered manner, allowing each to overhang the one below it just a bit, like upside-down stairs. Be sure that you have plenty of overlap to hold the rocks in place. The overhang need not be very deep to provide refuge from seasonal rain; it takes only a few inches to protect delicate plant crowns.

When constructing and planting, you will want to give some attention to aspect. During construction, you may wish to create overhangs with a variety of

orientations. Remember that areas that have been in shadow during the summer may allow the lower-angle sun of autumn and spring to enter. Late summer or autumn sun can damage plants that have spent most of their growing season in shade. Occasionally I have had problems with ferns that sunburned at the culmination of our dry season during September and October.

Rock fern and companion species in the pond grotto

I love ferns, large and small, so they grow in many areas of my garden. Some of the small ferns that I grow do not require rocks and overhangs; many grow in native soil in an open rockery. The climate of the Pacific Northwest, with its dry summers, wet winters, and prolonged, cool spring and fall is ideal for a remarkable variety of ferns. However, ferns are so widespread that there are species suitable for just about any climate.

In addition to numerous North American and European natives, I am experimenting with Australian and New Zealand ferns. These, I find, seem to prefer the open garden. *Blechnum penna-marina*, an old friend to many of us, has formed a large patch on the north side of our house, growing contentedly in native silt-loam and abundant moss. A special 'Large Form' that I purchased did not seem very happy in the grotto, so I transplanted it into the open rockery, where it has settled in nicely. *Blechnum watsii* (photo, p. 274), an Australian native, definitely does better in a warmer raised bed of rocks and heavier native soil. (A soil berm of this kind is known locally as a "granny bed" because of its popularity in our grandmothers' gardening day; Reginald Farrer, severe as usual, called it a "dog's grave.") This *Blechnum* does not unfurl until early summer, indicating its preference for warmer soil. Every year is a suspenseful yet hopeful race against frost to obtain ripe spore, which matures only in a warm autumn. I imagine that this beautiful, glossy "water fern" would do well in the southeastern United States and in the British Isles.

I created simple crevices for ferns in the pond bottom by using slabs of concrete rubble. Even the rockhound in me is not bothered by this departure from orthodoxy; the ends of the slabs mainly show, and these remind me of pebbly conglomerate. The light color is pleasing in the shade, although much of it becomes covered by a network of fronds by summer. The conifers overhead offer protection from beating winter rain. To my amazement, even *Aspidotis densa* (syn. *Cheilanthes siliquosa*), a serpentine endemic, grows beautifully in good light in a concrete crevice. The overhang areas have turned out to be good spots for growing some other members of this genus, which enthusiasts call "cheilanthoids." Flourishing in their own little overhang niches are *C. wootonii*, *C. fendlerii*, and *C. lanosa* (photo, p. 273). *C. wootonii* has a very compact habit, even in partial shade. Cheilanthoids look especially handsome in the spring when their new growth is unfurling with little snowy tips. They stay fresh-looking all summer. In this area, I apply less water in summer than in the rest of the fern garden. The "dry side" also is home to furry *Selaginella wallacei*, a fern ally, and springy, wiry

S. sanguinolenta var. *compressa*. Birds are partial to the latter selaginella for nest material—the complex, wiry net seems to be a perfect binding material. Several years ago, I even observed a hummingbird snitching some.

This is the only place that I have been able to grow *Goodyera oblongifolia*, a “rattlesnake orchid” that I purchased from Evelyn Hess’s Lorane Hills nursery, which emphasizes Northwest native plants. Some readers might wonder why I would *buy* something that grows in the wild 20 miles away. The answer is that this beautiful orchid, which features delicately netted and patterned “snake-skin” foliage, is unlikely to survive transplanting from the wild. It is widespread but not abundant. Ethical native plant nurseries can raise stock appropriately. Besides contributing to conservation, by buying plants I enjoy the benefits of the grower’s propagation skill.

The side of this garden area that receives more sunlight accommodates small trilliums such as *Trillium rivale* and *T. nivale*. Curiously, the latter, known as the snow trillium, blooms much later here than in its native range in the eastern United States, according to reports from members of the Internet discussion group Trillium-L. When I dare to plant it out, I hope that *Trillium hibbersonii* will settle in—my splurge at a recent Winter Study Weekend. A soldanella (species unknown, but with lovely dark purple flowers) grown from seeds from the NARGS Seed Exchange has bloomed in this partially sunny area; it appreciates coolness and afternoon shade.

In the cooler and much darker half, facing away from the sun, a large holly fern grows a bit out of scale. *Arachniodes simplicior* var. *variegata* has been reliable here. Maidenhair ferns are tolerant of low light, and here *Adiantum capillus-veneris* and *Adiantum aleuticum* ‘Subpumulum’ also grow. *Doodia media* and the easy *Asplenium Xebenoides* thrive without direct sun.

For structural reasons, the crevices at the pond’s edge contain heavier soil, yet they are ideal for some ferns. Here, for variety, I also grow a couple of “blond” dwarf conifers that are too sensitive to tolerate direct sun. I also use the pond as a temporary nursery for growing on fern divisions, or as a place to try new cultivars with caution. I was uncertain how the new *Athyrium* ‘Ghost’ would do here in Oregon. This fern originated in Nancy Swell’s garden in Virginia. It is, according to Tony Avent of Plant Delights nursery, a hybrid between the Japanese painted fern (*Athyrium nipponicum* ‘Pictum’) and the southern lady fern (*Athyrium filix-femina*). This sage-green fern is exquisite, and I wanted to find just the right spot for it. It looks as though it will eventually outgrow the grotto, and then I will happily transplant it.

Pushing the hardiness envelope

Many fern treasures are temptingly gorgeous but borderline in terms of winter hardiness. Using the protection of trees and rocks, and occasionally a tent of Reemay™ (a filmy spun fabric used for agricultural row cover), has emboldened me to plant out a young tree fern, *Dicksonia antarctica*, near the pond. This obses-

sion, originally purchased in a four-inch pot, resided in our dining room for many years. It had suffered from attacks by our cats and my neglectful indoor watering regime. So far, it is doing much better outdoors. The Reemay tent is used only during the brief cold spells. It's nothing fancy: I just take a generous-sized piece of fabric and use metal clamps to create a loose tent folded around the fern. A few rocks hold it in place. The winter of 2002–2003 was so mild that I never used the tent.

Failures, lessons, and challenges

Some of my plantings have not worked well. Scale is important for harmony in any rock setting. I have plenty of open space for ferns that grow into massive clumps—so why on earth would I tuck some little darling in a 4-inch pot into a crevice, conveniently forgetting to do basic research on its eventual size? You need to look up the facts and find out which fern is going to burgeon into a splendid clump. This happened with one of my favorites, Judith Jones's cultivar 'Rumpelstiltskin'. The young ferns have little fronds with alluring proportion; but mature ones can develop huge, splendid fronds. For a couple of years, 'Rumpelstiltskin' looked terribly cute in its crevice, but all of a sudden it outgrew it. I hadn't paid attention to the label! Fortunately, it took the necessary move well and now occupies a nearby raised bed set with rocks, duff, rich soil, and suitable companions. I'm glad that we had a workshop on dividing ferns at a recent Winter Study Weekend in Vancouver, for mine certainly need some attention.

Several years ago, I got another tiny pot with a cute fern that has turned out to be a real colonizer. *Blechnum cordatum* does well in relatively heavy soil. Moved quickly from the grotto, it now occupies a large space of its own on the north side of our house. Here it can creep at will, sending up elegant fiddleheads each spring that unfurl into stiff, stately fronds. This brings us to another important point: not all ferns want the the fluffy, duffy woodland soil that we typically think of as "fern soil." Since the old pond garden fills quickly with debris from the overhanging firs, I found that smaller ferns that like heavier soil did better in the rock crevices above it.

Another lesson I learned is that some ferns are very late to wake up. Like *Arisaema candidissimum* (which surprises me *every* year), they wait until summer to show their faces. About the time you think your fern is gone, a little sprout appears, then within days you have a full-sized plant. I have learned, though, not to poke around forgetfully in "bare" spots," lest I damage emerging growth.

Many of the cheilanthoids want dry conditions, but they will not stand being desiccated. I learned this the hard way. I lost a lovely little *Cheilanthes lindheimeri* when, after several years in its seemingly perfect little corner, it had escaped even the occasional summer water.

I have also learned the hard way that any area under stout, mature conifers requires minimal but regular clean-up. Even an annual removal of excess needles

goes a long way toward keeping understory plants healthy. Some are more tolerant of the debris than others. Cyclamens thrive in this whole area but will rot in our long wet springs if excess duff isn't occasionally removed.

The future

Some sad day, we will have to remove the trees. They had a rough youth, having been topped by the former residents. (Doubtless they meant well, but they had never heard of Plant Amnesty, an organization dedicated to halting the ignorant butchering of trees and to educating the public about appropriate tree choices.) If the west-facing berm then becomes exposed, it will no longer house *Primula juliae*, asarums, epimediums, cyclamens, and ferns, and it will have to be planted with penstemons and daphnes. I will panic, and then I'll probably set about building a real grotto. Someday the pond may once again host fish, but until then I will enjoy my ferns there.

Louise Parsons of Corvallis, Oregon, is an avid gardener, hiker, and small-plane pilot. She and her husband operate a surveying business that takes them to wild lands around the Pacific Northwest. Louise is active in the Emerald Chapter of NARGS and on rock gardening Internet forums. She contributed the chapter "Soils" to the book *Rock Garden Design and Construction*.

CORRECTION

In the summer 2003 issue, p. 208, the thickness given for the acrylic sheet used in David Sellars's rain shelter structure should be **1/4 inch**, not 1/8 inch.

The Challenge of the Shady Rock Wall

Eva Gallagher

My favorite planting site is at the base of a north wall. In my Ontario garden, this is the best microclimate for marginally hardy plants, especially those with evergreen foliage. Here they are protected from premature thawing and from damaging winter and spring sun. The accumulation of autumn leaves near the wall's base also provides excellent insulation.

To get these favored sites, however, I must have north-facing stone walls, which, unlike the soil at their feet, are not at all favored planting positions. These walls are in the shade, and dry shade at that, because they are filled with fast-draining sandy soil, poor in nutrients. Tree roots are a major problem; every five years or so, I have to rebuild the walls to replenish the soil and remove the tree roots, mainly those of poplars. Even though most of those trees were cut down more than ten years ago, their roots live on, snaking relentlessly wherever they find moisture and nutrients, and even going up and over plastic barriers in the soil.

I built my latest wall by cutting into a bank facing northeast (photo, pp. 274–275). I ended up with a 3-foot-high (1-meter) rock wall. By curving and undulating the wall, I made more sheltered nooks than could be achieved with a simple curve or straight line. I replaced the pure sand that constitutes Deep River's "soil" with a mixture of peat and leafmold that would retain as much moisture as possible.

What shall I plant in my 12 feet of wall?

High on my list are saxifrages. In fact, a shady wall could be planted entirely with species from this genus. Among the London Pride group, the best is *S. xurbium* 'Elliot's Variety'. This seems to come true from seed. It is a very compact form of London Pride, with shorter flower stalks (about 8 inches/20 cm) and all flower parts tinted rosy pink. The massed effect of the delicate flowers results in a showy plant. *Saxifraga cuneifolia* (photo, p. 275) is a very tidy species with dark green leaves and a delicate shower of white flowers. A yellow-variegated saxifrage,

S. xurbium 'Variegata Aurea', looks rather untidy but is interesting nonetheless. All these need protection from winter and spring sun and will grow in complete shade, even in poor, dry soil. If there is no snow cover, the evergreen leaves will be damaged, but the planting will recover once new leaves emerge to hide the untidy mass of dead brown rosettes. If you have unreliable snow cover, plant them lower on the wall where they will have a better chance of being protected. They spread by sending out runners and forming new rosettes.

Another group of saxifrages that do well on the shaded wall are the familiar "mossies." These like protection from the noonday sun and thus tolerate semi-shade to deep shade. They form bright green mats; some of the smallest resemble *Sphagnum* moss. Even though mossy saxifrages may not be as tight and floriferous in the shade as in full light, the mats are very attractive as they cascade over the rocks. I have grown several different species from seed; they all have white or cream flowers on 6–8-inch (15–20-cm) stalks. There are some named cultivars with pink or red flowers that are worth searching for, such as 'Peter Pan'. In times of drought some species may perish, but others display remarkable powers of regeneration once they are watered and the desiccated parts are cut back. Garden centers often carry several varieties. Some of the species to watch for in the seed lists are *S. cebennensis*, *S. moschata*, *S. trifurcata*, and *S. hypnoides*.

Some of the silver, or encrusted, saxifrages also do well in the shade and are spectacular additions to the shady wall (photo, p. 275). Though the plants of this group are mostly succulent and look as if they would be very drought-resistant, this is misleading: most need at least some shade from the noonday sun. *Saxifraga paniculata*, which makes small rosettes about 1 inch (2.5 cm) across and has flower stalks about 8 inches (20 cm) high, is right at home in a shady rock wall. A circumboreal plant, it occurs in the Algonquin Provincial Park's (Ontario) Barron River Canyon, where it survives as a relict from the last ice age. My first plant-hunting expedition was to search for this plant, and it wasn't until I had given up and was returning back down the canyon that I discovered it. I had been looking for it on the hot, south-facing rocky talus slopes—areas that I considered alpine. I finally spotted one while I was looking for another rare plant in the canyon, the spleenwort, *Asplenium trichomanes*. The saxifrage was growing in cracks in mossy walls, all on the heavily shaded south side.

A larger, more spectacular encrusted saxifrage that I grow has rosettes up to 4 inches (10 cm) across. I have not been able to identify it positively, but it may be *Saxifraga cotyledon* or a hybrid of it. The silver-edged, gray-green leaves provide an unusual color contrast in the shade. The 2-foot (60-cm) arching sprays of white flowers are an added bonus. It appreciates fertilizer during the flowering season; without this, it does not flower readily in the shade.

Hepaticas also seem to do well as long as they get spring sun. I plant mine near the top of the wall under the deciduous trees. However, they do like a rich soil and lots of water in the spring, though they can resist drought later on. Their thick evergreen foliage is a bonus even when they do not bloom. There are many forms, with either pink or blue blooms, but these are hard to find in our local nurseries. Two species are native to eastern North America, and these are similar

except for the leaves: *Hepatica americana* has rounded lobe tips, and *H. acutiloba* has pointed ones. I bought *H. asiatica* var. *japonica*, which has larger flowers and evergreen foliage that stands up better to the winter.

A treasured plant for the shadiest part of the wall, and one that I have grown only near the base where it will get reliable snow cover, is *Ramonda*. Once it blooms, you can see clearly that it is a gesneriad, related to the "African violet." There are several species, all rather similar, and you should try them all. The trick is to get the seedlings large enough to plant out. The seed is dustlike and should be grown like begonia seed, surface-sown in a mini-greenhouse (a flat with a plastic cover to retain moisture). The tiny seedlings are very slow-growing and should be kept under lights for a second season. I have lost many first-year seedlings because I was impatient and planted them out too small. Feed them with diluted liquid fertilizer to speed up growth. Once the tiny seedlings are several months old, they have amazing powers of regeneration even if dried out. The same is true for mature plants, but not until they are well established with a good root system. Ramondas can also be propagated by leaf cuttings, as one does with African violets, and this would seem to be a much faster way of getting new plants. Take care with the hairy leaves and crown of the plant, which need to be kept dry, so that planting them in vertical crevices is ideal. Once I build up enough stock, I think that I will try a whole wall of ramondas, plastered with the heavy-textured hairy leaves. A gesneriad cousin with very similar germination and growing requirements is *Haberlea rhodopensis*; I understand, however, that it needs more light to bloom, so it would be more suitably planted near the top of the wall.

If you are not afraid of invasive plants, *Campanula rotundifolia* will fit the bill. I have seen it growing amid huge talus boulders in Smuggler's Notch in Vermont, where it gets some spring sunshine but is definitely shaded in the summer. It is a circumpolar plant, and the Smuggler's Notch form has stem leaves that are even more linear than normal—very thin and hairlike. There is a dwarf form, 'Mingan', which would be more suitable for a small wall. It is found in the Mingan Islands on the north shore of the St Lawrence River, and Michel Otis from the Montreal Botanical Gardens has introduced it to local nurseries. Another dwarf form, this one from Scandinavia, has been offered by Mt. Tahoma Nursery in Washington state.

Although related to campanulas, species of *Phyteuma* look very different. One species I have, which came labeled as *P. scheuchzeri*, has been growing in a shady wall for more than 15 years, surviving dry spells with impunity and even self-sowing in rock crevices (photo, p. 274). As long as it receives some morning sun, it will produce its arching 12-inch (30-cm) flowers stalks topped with blue spheres of curved petals.

The Eastern woodland *Phlox stolonifera* is also a mainstay. It prefers acid soil in shade, which is what I can offer it. Once established, it withstands dryness in summer. There are many named cultivars, but the best is one that I received about 20 years ago. I've lost its name, but it is soft violet-mauve, not as harsh a color as some of the pink and purple cultivars. The white form does not seem to be as vigorous. These phloxes spread rapidly once established and eventually

cover the rock wall completely—not necessarily a good thing, if you have taken great pains (as I have) to get lichen-encrusted rocks. A great combination with *P. stolonifera* is *Cornus canadensis*, the bunchberry, which blooms at the same time and has showy white bracts. For a while these two grew well together, but over the years the phlox has taken over.

Another useful plant to look for is *Chiastophyllum oppositifolium* (syn. *Cotyledon simplicifolia*). It looks like a sun-loving succulent, with thick leaves reminiscent of London Pride. In June it produces arching sprays of yellow flowers about 6 inches (15 cm) tall. This definitely needs a shady, protected spot, since the evergreen foliage tends to get burnt by winter and spring sun, so down near the base is the best spot for it, though not a good place to see the flowers. Perhaps a rock above it, set back a bit from the top of the wall, would provide enough sun protection, and then the flowers could arch out properly.

The genus *Symphyandra*, related to *Campanula*, also holds some useful species. The 2-foot-high (60-cm) *Symphyandra hoffmannii* (which lurks in seed lists under various names) is really too big and stiffly erect for a wall, though it grows well in dry shade. However, *S. zangezura* is a wonderful find. I originally put this plant into my overflow holding area on the dry north side of my garage and forgot about it. What a surprise four years later, when I spotted these delicate mauve bells on sprawling stems! I will have to move it to my wall, where it will be able to cascade down the rocks. Another good one is *S. wanneri*, an upright biennial that self-sows. Its flowers are rich purple, on stems that can reach 12 inches (30 cm) but tend to be shorter where the soil is poor and dry.

There are many sedums suitable for the shady wall. *Sedum magellense* does quite well for me in a dryish, semi-shaded area, even though it comes from moist, shaded spots in the Alps. I originally ordered this plant from a seed list because I thought that it was from the tip of South America near the Strait of Magellan. Usually I have trouble growing South American plants, but I thought that a sedum would be easy. Despite my disappointment over its origin, it is easy, a tight little plant with shiny, fleshy green leaves shaped like little cylinders. *Sedum album* var. *micranthum* is a tiny, refined, light green variant of the rampant typical form of *S. album*. In this form it is ideal in a trough and also drapes nicely down the shady rocks. The flowers of both sedums, like many in the genus, are an uninspired white, but the foliage is superb.

Although most primulas like a moister soil than can be provided by my shady rock walls, one that has survived for 10 years or so under a large white pine is one I received as *Primula darialica* (but it could be *P. farinosa* or *P. frondosa*, as there is much misnaming among these species). It survives because it blooms very early, in late April or early May, when the ground is still moist from the melting snow. It does not seem to mind a drier aspect later on, sometimes shrivelling up but recovering fully once moisture becomes available. The leaves are a pleasing light gray-green, dusted with white farina underneath. They contrast well with the delicate rose-pink flowers on 5-inch (12-cm) farina-coated stalks.

The most vigorous primula in my garden is the stoloniferous Japanese species *Primula kisoana* (photo, p. 275). It spreads happily in many dry, shady areas, even

streaking up into a shady wall from the base where I had first introduced it. It emerges in the early spring with felted gray leaves, followed soon by hot pink flowers. As long as it gets a bit of spring sunshine and acid soil, shade later in the year is no problem for it. Planting it in a dry, shady wall would help curb its exuberance.

Heavy feeding of primulas helps to maintain their vigor. A fast way to fertilize your shady walls is to throw handfuls of slow-release fertilizer (use a formula intended to boost flowering, not a high-nitrogen lawn fertilizer) on the wall as soon as the snow melts, before the leaves emerge. This way there is no danger of burning the foliage, and the plants get off to a speedy start while there is still spring moisture in the ground.

A dry, shady wall with poor soil may not be the easiest place to garden, but by experimenting with different plants, you will discover many species that you can use. And even if they are not in their optimal habitat, there are many plants that will rise more than adequately to this challenging environment.

Eva Gallagher of Deep River, Ontario, is an active member of the Ottawa Valley Rock Garden Society and contributes frequently to its newsletter, where an earlier version of this article appeared. She starts most of her plants from seed, and, being ever the optimist, always looks for plants that will flourish in her fine-grained, sandy soil, both acid and often root-infested. Her special interests are rhododendrons and saxifages.

Gone to the Devil for Two Weeks

Reuben Hatch

My interest in the plants of Tasmania began long ago, while I was exploring the plant treasures at the Royal Botanic Gardens in Edinburgh, Scotland. Especially fascinating to me was the exotic shrub *Richea scoparia*. Later I read Harold Comber's account of plant collecting in Tasmania. That book, and further reading, left me with an impression of a landscape both bleak and rain-sodden, so I set aside the thought of visiting this island off the southern coast of Australia.

I changed my mind, however, when I chanced on an article in a travel magazine that depicted Tasmania as a place of empty, sunny beaches, craggy mountains decked with alpine flowers, and charming villages. I promptly bought a plane ticket to Hobart, the capital of this Australian state, and reached my destination on schedule despite the carrier's threats of bankruptcy and labor problems, and countless shoe investigations by airport security along the way.

The Place

Tasmania lies at 41° to 43° south latitude, south of Melbourne, Australia, separated from the mainland by the Bass Strait, about 150 miles wide. The island is heart-shaped and about 26,000 square miles in extent—about the size of the U.S. state of Maine, or of Scotland. At this global latitude there is little land surface, and the ceaseless winds known as the “Roaring Forties” are a major influence on Tasmania's climate. The wind strikes the island mostly on the west side, dumping annual rainfall of more than 100 inches (2500 mm) on the coastal belt, a bit less on the central plateau, and only about 30 inches (750 mm) in the Midlands and east coast. Hobart receives less rain than any other major Australian city except Adelaide. Temperatures near the sea range on average from lows in the mid-30's F (just above 0°C) to highs in the mid-70's F (c. 25°C). Coastal towns enjoy a frost-free climate. Inland, frost is more likely, but there is no continental climate zone. Although snow is frequent at high elevations, deep or sustained freezing does not occur.

Most of Tasmania is hilly or mountainous. The mountains reach only about 5000 feet (1650 m) but are often steep and craggy, with boulders near the summits. The southwestern and central plateau regions are made up of ancient metamorphic rocks, doleritic, crystalline, and gabbro-like. The rest of Tasmania is mostly sandstone deposited over eons during which the island was repeatedly joined to and separated from the mainland.

The weather changes quickly here, a factor for the hiker to consider. Locals brag that Tasmania can get all four seasons in one day. Visitors anywhere get their impression of a place's weather largely by the luck of the draw, and I was lucky on 12 of the 14 days I spent there in January 2002. What I experienced was warm "T-shirt" weather with cooling breezes and scudding clouds, and only two mildly rainy days. It was nearly perfect mountain hiking weather. I believe the odds of a visitor's encountering good weather and good flowering are best during December through February, the southern summer.

Flora and Resources

Of the 2000 flowering plant species recorded in Tasmania, 200 are endemic to the island. The flora is approximately split in half between species that migrated from mainland Australia—such as *Eucalyptus*, *Acacia*, and various pea family members—and those that belong to the Southern Oceanic flora. Many of the latter have relatives in New Zealand and in the southern Andes and Patagonia. Outliers are also found at high elevations in New Guinea and the Hawaiian Islands. This second group is of more interest to rock gardeners. The following discussion begins in the alpine zone and works down.

Many plant guides are available locally; some of these are listed at the end of this article. Mary Cameron's *A Guide to Flowers and Plants of Tasmania* contains a good chapter on "The Vegetation: General Information."

Alpine Plants

Most of the plants on the high ridges and moorlands are severely compressed in growth habit. These are the plants many rock gardeners dream of growing as dense mounds on their screes or trough gardens. They form clumps, buns, scabs, mounds, balls, and polsters, terms honored in rock garden tradition. The foliage comes in various shades of green, gray, or even cream. The flowers—usually white, as in New Zealand—tend to be insignificant individually but impressive in masses. Sometimes one finds colonies of a single species, while in other places several species share their space, appearing like a patchwork quilt. I saw one dark green pad threaded with streaks of another plant's gray foliage, like slug trails. Some clumps are coinhabited by sedges and other herbs. All these cushions are densely adpressed, so that knocking on one is just like knocking on a door; it's doubtful you could force your finger between their branches. Among the nota-

ble cushion-formers are species of *Donatia* (photo, p. 279), *Dracophyllum* (p. 280), *Ewartia* (p. 278), and *Abrotanella*. There are also two choice shrubs of compressed habit which have attractive flowers and berries: *Pentachondra pumila* and *Gaultheria tasmanica*. A conifer that grows flat on the ground is *Microcachrys tetragona*, which resembles a *Selaginella*. With these cushion plants grow species of looser habit, such as *Helichrysum*, *Celmisia* (p. 281), *Euphrasia* (p. 280), and *Gentianella*.

Another low-growing plant found throughout the moors and rocks is pineapple grass (*Astelia alpina*), a member of the lily family with clumps of broad, spearlike leaves covered with silver indumentum. Pound for pound, it may be the most common plant encountered at higher elevations. It fills the spaces between the rocks and also occurs as large, free-standing mounds, extremely dense and apparently as tough as nails.

The genus *Richea* occurs at both alpine and lower elevations and includes five or six species. It is in the family Epacridaceae, which also includes among its genera *Dracophyllum*, *Pentachondra*, and a genus that may be familiar to some North American readers, *Cyathodes*. The two *richeas* that I found to be most common and also most interesting are *Richea scoparia* and *R. pandanifolia*. Both are spectacular, but they could hardly be more different in appearance.

Richea scoparia is a shrub growing 1 to 5 feet (0.3–1.6 m) tall, which reminded me of the manzanitas (tall *Arctostaphylos* species) of the American West. Its leaves are short, linear, and sharp like those of *Acantholimon*, and they are a bane of bush-walkers. The flowers are small, like those of heath (*Erica*) in size and shape, with perhaps 50 florets on a 5-inch (12-cm) terminal spike. Some plants were covered with bloom, but others flowered sparingly. The flower color also varies: I saw shades of orange to red, white, cream, and yellow (photos, p. 276). I haven't seen this plant in cultivation except at Edinburgh and in Tasmanian nurseries.

Richea pandanifolia, common called "giant grass tree" or "pandani," definitely makes a statement (photo, p. 277). At first sight, it looks strangely out of place, but after a while it seems perfectly in place. It reminds me of the "megaflores," the giant *Lobelia* and *Senecio* species of eastern Africa. One guidebook says this species is a "tree" reaching 40 feet (13 m), but the ones I saw, adult plants at high elevations, were from 5 to 8 feet (1.6–2.6 m). Plants are usually unbranched, and the lower trunk is clothed with persistent dead leaves. Each leaf is 1 to 3 feet (30–100 cm) long, broad at the base and tapering to an elongated, almost threadlike tip. The leaves, which move in the slightest breeze, are normally green but turn shades of red when stressed. The pink to red flowers are usually hidden under the foliage. *R. pandanifolia* is found at all elevations in wet areas, including the alpine zones where conditions are favorable for it.

Heaths and Their Allies

Heath vegetation (using the term "heath" as a vegetation type, not in reference to the heath family Ericaceae) covers the mid-elevation landscape extensively, interspersed with *Eucalyptus coccifera*, conifers, and taller flowering shrubs such

as *Banksia* and *Telopea*. A few bulbous plants, ferns, sedges, and flowering herbs complete the scene.

The shrubby plants here range in height from 1 to 6 feet (0.3–2 m) or more. Most have white, pink, or rose flowers, and many produce colorful berries. Some species have startlingly bright new foliage of red, maroon, or brownish pink. All this color activity goes on simultaneously, but the overall effect is more subdued than you might think. If you could pick out plants and place them for a group portrait, you could compose a startling picture. The common heath genera include *Cyathodes*, *Pimelea*, *Bellenden* (photo, p. 281), *Leptospermum*, *Boronia*, and *Coprosma*—quite a mob. Rock gardeners in mild-winter areas could mix a selection of these attractively with conifers and ericaceous plants.

Three outstanding shrubs, or shrubby trees, in this zone are *Podocarpus lawrencei*, *Nothofagus gunnii*, and *Eucalyptus vernicosa* (photo, p. 279). The last is of special note because it is the smallest member of the genus *Eucalyptus*. An attractive compact shrub 2–5 feet (0.6–1.6 m) tall, with ovate green leaves, it resembles an *Arctostaphylos* or *Rhododendron*. You need to look under the leaves for the small white flowers and seeds. These three woody plants would pull their own weight in any garden.

Three bulbs that I saw in flower are worth mentioning. *Diplarrhena moraea*, a white-flowered irid, often grows in large colonies. *Milligania densiflora* is a tufted “lily” with numerous creamy flowers over tufts of grassy leaves. By far the most striking is *Blandfordia punicea*, another member of the lily family (photo, p. 281). On stems 1 to 3 feet (30–90 cm), it bears 20 or more tubular flowers, generously sized and bright scarlet, with the inner lobes marked in yellow. I understand that it is difficult both to cultivate and to flower.

Several other bright-flowered plants inhabit this zone as well as extending down to sea level. *Hibbertia procumbens* is a bright yellow potentilla lookalike often grown in mild-climate rock gardens. *Stylidium graminifolium* (photo, p. 281), with many large, pink to white flowers on 2-foot (60-cm) stems, often grows in a mass as a convenience to photographers. I also enjoyed a *Wahlenbergia* species (a genus related to *Campanula*) with large blue flowers on 1-foot (30-cm) stems.

Conifers

I've already mentioned *Podocarpus lawrencei* and *Microcachrys tetragona*. Other conifers that make up the dwarf mountain forest include *Diselma archeri*, a compact yet graceful, cypress-like shrub 4–6 feet (1.3–2 m) tall; and *Microstrobos niphophyllus*. Two *Athrotaxis* species and their hybrid—*A. cupressoides*, *A. selaginoides*, and *A. ×latifolia*—grow individually or in mixed groves up to the high ridgetops. Their whipcord branchlets are held in various attitudes from “Christmas tree” style to “bad hair day.” In any style, they suit the landscape perfectly.

The Huon pine, *Lagarostrobos franklinii*, is Tasmania's largest conifer. Most of the old specimens have fallen to loggers, except in the inaccessible and now pro-

tected southwest. Large trees can be seen in the Royal Tasmania Botanic Gardens. It is reported that a large grove of Huon pine has been identified, by DNA testing, to constitute a single clone—a huge biomass produced by asexual proliferation, estimated to be over 10,000 years old.

Grasses, Sedges, and Aquatics

There are many plants of these groups in Tasmania, some of them noticeably ornamental. *Xyris marginata* blooms at 1 foot (30 cm) tall, with bright yellow 3-petaled flowers on reedlike stems. *Gymnoschoenus sphaerocephalus*, or button grass, forms dense clumps up to 2 feet (60 cm) high and wide, with arching flowering spikes to 4 feet long, very attractive in their savanna setting, but their sharp leaves are a threat to hikers. An aquatic plant, *Villarsia exaltata* (a relative of *Menyanthes*), filled a small pond, holding bright yellow flowers above 4-inch (10-cm) lily-pad leaves.

Ferns

I encountered several distinctive ferns. *Gleichenia alpina* (photo, p. 278) is a common ground cover at mid elevations in the mountains. It rambles over rocks, covering wide expanses of ground. The fronds are green above and covered with brown woolly hairs below. The tips of the fronds roll up, making the carpet appear bronze-green. *Blechnum watsii* is a statuesque plant of lower wetlands, dark green with broad fronds as shiny as plastic.

The best of the Tasmanian ferns for startling effect, and arguably the island's signature plant, is *Dicksonia antarctica*, the ubiquitous tree fern. I had seen it in New Zealand, but nowhere in as much profusion as here. Tree ferns, radiating charm and majesty, were almost everywhere except the Midlands, which are probably too dry for them, and on the higher central plateau. The fronds, 2–3 feet (to 1 m) wide and 6–8 feet (2–2.6 m) long, radiate slightly upward, forming a rosette 6 feet or more above the ground. The trunks, which bear witness to many years of growth, may be 2 feet (0.6 m) or more in diameter at the base and often emerge from the soil at an angle before straightening up. Tree ferns grow best in humid settings by rivers and waterfalls, but they are often seen on bluffs in direct sun—sunlight that can be quite intense here, thanks to the ozone hole.

Eucalypts

Species of *Eucalyptus* are the most widespread and diverse of Tasmania's trees. It is a pity that there is no recent comprehensive reference source on the genus, which includes 300 to 600 species, depending on which authority you consult. Most are endemic to Australia, and about 20 to Tasmania. South of Hobart,

eucalypt farms for logging are a common sight, and the gray-blue foliage of acres of young trees is striking.

The smallest eucalypt, *E. vernicosa*, was described earlier. Within an hour's drive-and-walk from it grows the world's tallest hardwood tree, *E. regnans*, which tops off at 324 feet (99 m). The record specimen can be inspected from a platform reached by a short trail from a forest road. In 1936, a now-deceased *E. regnans* measured taller than the record California coast redwood (*Sequoia sempervirens*) at more than 368 feet. (It seems that Tasmania is out after California's tree records; the Huon pine clone beats the bristlecones for age.)

Eucalyptus coccifera, the Tasmania snow gum, is common. On high, windswept sites it tends to be a dwarf, twisted tree to 6 feet (2 m) tall. *E. pauciflora* is sought out by photographers for its multicolored, skinlike bark, which usually occurs on only a few individual trees in a given grove. I was directed to three colorful specimens with bright red stripes on their gray-tan trunks and branches.

Walks and Hikes

Tasmania has many walking and hiking trails to destinations of interest to plant-lovers. In addition, I'll describe two popular treks.

Walks

Mount Wellington (4165 feet/1282 m) rounds out an arched ridge west of Hobart. A paved road winds gently to the top, 45 minutes by car from downtown. It passes through garden suburbs and up through the various vegetation zones, ending at a parking lot. The alpine plants appear immediately, and it doesn't take long out among the moorland boulders to spot something of interest. The mountain is often shrouded by clouds in the morning but these thin out later in the day. An observation platform offers grand views of the city and water beyond.

People's Walk, in Strahan on the west coast, is a flat 45-minute walk following a stream through lush forest to a waterfall.

Sir John Falls, in the Wilderness World Heritage Area on the beautifully pristine Gordon River, is accessible only by seaplane. The plane sets down on the river, taxis to a dock, and waits 30 minutes while passengers walk to the falls. It doesn't take much imagination to envision a dinosaur crashing through the brush.

The Abt Railway runs 22 miles from Strahan to Queenstown with a rack-and-pinion (cog) steam engine, vintage 1895, with a very interesting history. It takes passengers into beautiful virgin forest.

The following three walks are in the central plateau along the Queenstown-Hobart Highway. Nelson Falls and the Franklin River nature trails offer lovely water and forest scenes and are quick and easy. Donaghys Hill Lookout Trail is a relatively easy 45-minute uphill loop with a splendid view over the wilderness. Lake St. Clair Power Station (called Pump House Point on my map) is reached by

turning north at Derwent Bridge on the St. Clair National Park Road, and then east on an unsealed road that leads quickly to a parking spot by the pump house. There are many plants along the road and in the area at its end. Of special interest is a waterlily pond, fine striped-bark *Eucalyptus pauciflora*, and *Callistemon pallidus* covered with lemon-yellow bottlebrush flowers.

Hikes

Hartz Mountain National Park, trail to Hartz Peak, is a relatively easy day's outing from Hobart. The trail leads up gradually through ferns and heath, with a brief side trip to a lake, then up through moorland (photo, p. 277). The boardwalk ends and the trail continues up a steep hillside to a pass, with further rock-hopping to the peak. The view is worth the effort, but there aren't many new plants past the boardwalk's end. This was my first encounter with the boardwalk trail system that soon became familiar. Boardwalks became a preservation strategy for the National Parks system in the early 1980s. The planks, on the ground and strung together with wires, squeak when stepped on, a sort of "hiking song." The newer ones use pressure-treated lumber raised a foot above grade, a luxury express lane I christened the "Tassie Turnpike." Trail-builders employ other devices to assist and protect hikers, such as bridges, steps, and staircases.

Ben Lomond is a broad "whaleback" ridge reaching 5160 feet/1588 m, the second highest point in Tasmania. The road, an hour's drive from Launceston, ends at the base of a sporadically used ski facility. I visited on an inclement day when clouds and fog reduced visibility enough to force a retreat, but reportedly it's a short walk up to the alpine plant fields. On my fogbound walk I encountered furry apparitions in the form of rufous wallabies, who gave me looks that said "G'day, mate! You're crazy to be here!" before they hopped away.

South East Cape: From the end of Tasmania's (and thus Australia's) most southerly road at Cockle Creek, a trail cuts diagonally across to the spectacular crashing surf of the Southern Ocean. The trail passes through eucalypts, reed flats, and shrubs (including *Correa backhousiana*). It's a 5-hour round trip, including lunch on the beach, and it's worth the effort. The trail serves as an entry or exit point to the Wilderness World Heritage Area, 8000 square miles of protected land. The full trek takes 8 to 11 days, traversing wild coastal headlands and mountain terrain. No fooling around here: the trekker has to pack in everything that will be needed, waterproofs essential. I passed 20 or 30 backpackers coming and going along the way. As I ate my lunch appreciatively on the beach at Lion Rock, I contemplated the geography of the site: halfway between the Equator and the South Pole, I was looking south to Antarctica with nothing before me but thousands of miles of ocean.

Cradle Mountain in Lake St. Clair National Park is Tasmania's poster child (photo, p. 277). Well-known and much-photographed, it is the only hiking destination I visited that could be considered crowded. The popular 6-day Overland Track runs south from Cradle Valley to Lake St. Clair. The park road ends at Dove Lake, the starting point for day hikers. The first day I followed the Overland Track to Kitchen Hut at the base of Cradle Mountain, enjoying great plant

hunting and spectacular views. A steep, rocky scramble of 500 feet leads to the mountaintop. The second day, a longer hike took me along the Lake Rodway Track, which crosses behind Cradle Mountain and meets the Overland Track one hour's walk south of the hut; there were a number of plants that I hadn't seen the day before. These two hikes require a mostly gradual ascent of 1200 feet, and much of the trail is boardwalk, with some staircases and minor scrambles. Approaching the north side of Hanson's Peak, you have to negotiate a 40° rocky slot 50 feet long, using a mounted chain for assistance. These embellishments add character to the hike and are no real impediment. The trail around Dove Lake is popular.

Montezuma Falls is an easy hike or longish walk (2 hours round trip) from a trailhead a short drive south of Rosebury. This jaunt features tree ferns and the highest waterfall in Tasmania.

Mount Field National Park, within easy reach of Hobart, offers several walks and hiking destinations, as well as Tasmania's second ski facility. My hike to West Mount Field was cut short by a bouldered trail and impending rain, but I saw a lot of plants, including some I saw nowhere else.

Plants in Cultivation

The Royal Tasmanian Botanic Garden is a first-rate public garden on 33 acres of rolling hillside on the outskirts of Hobart. It holds a world-class collection of trees, large in both number of specimens and their dimensions. There is a comprehensive collection of native plants, including some hard-to-tame alpenines, and many other features. The Botanical Discovery Center here has interesting displays. I was particularly pleased by a room displaying 150 framed professional photos of alpine and heath subjects. Each is numbered, and you can punch the number in at a terminal and obtain pertinent information on the plant, including known sites.

I visited two nurseries. Plants of Tasmania Nursery and Garden is located off the road to Mount Wellington, above Hobart. I spent just enough time there to see that they have a comprehensive collection of healthy-looking plants for sale. Their catalog includes hardiness ratings and suitability for garden and container planting.

The other nursery I visited—both early in the trip and on my last day (an irresistible urge!)—was Woodbank Nursery, operated by Ken Gillanders and his wife, Lesley, who have since retired from the nursery business. It would be a daunting task to do justice to this amazing nursery and garden collection. The Gillanders had nearly 30 years of hard work keeping on top of a retail nursery operation, especially one listing around 2000 items, coupled with a large display and stock garden and time for many plant trips as well. They collected seed from around the world and grew on, selected, and offered many of their collections.

I can't omit mention of the abundant garden plantings in and around Hobart. Being frost-free must create a gardening dilemma of too many choices.

Fuchsias, pelargoniums, and solanums that most of us treat as summer container subjects here form woody masses of major proportions. The pollutant-free air intensifies flower colors. One popular and attention-getting combo is blue agapanthus, rose-pink astilbe, and orange kniphofia.

Fauna

Tasmania has a scaled-down array of the marsupials characteristic of Australia, including the platypus, echidna, and endemic Tasmanian devil. Many can be seen in the wild, especially at dusk, but to make sure I saw them, I visited one of the island's several wildlife parks. (I did see a platypus den and a photo of its occupant at the Possum Hut Café near Mount Field National Park, though.) The Tasmanian devils I saw at the park seemed relaxed, cavorting mildly in their pen; I think they were juveniles and had yet to learn of their bad reputation.

Most of the birds in the bush tend to be heard and not seen, though I observed a few parrots on the South East Cape. Near Cradle Mountain, I encountered the black currawong, a raucous, crowlike bird with beady yellow-green eyes, which stole my bag of potato chips.

Tips for Travelers

Tasmania has many features that add to the pleasures of a plant-hunting trip, not least a common language with the U.S. and Canada. Goods and services were a bit more expensive than at home, but in January 2001 the exchange rate (which fluctuates) was very favorable for the U.S. traveler. As for the people, there are about half a million in Tasmania, and based on what I experienced, all of them are friendly people, ready to give directions, have a chat, and even put up with, well, stupid tourist questions.

Travel to destinations is straightforward and quick. Outside Hobart and Launceston there is not much traffic. The roads, even the few unsealed ones, are well maintained. Thus, the number of walks I describe here was not excessive for a two-week visit.

Excellent maps, guides, and other printed materials published by the Tasmania Tourist Bureau are available almost everywhere. Most communities have a Tourist Information Office with first-hand local information. Despite all these amenities, the lodging occupancy rate during my summer visit was low, and the tourists were mostly mainland Aussies, with a few Asians and Europeans.

My lodging and food were great (a favorite was the Wellington Lodge in Hobart). Tasmanian seafood and wines are excellent, and of course, there is an ample supply of beer. My only complaint is that I'd have to watch deli staff carefully while they made up my sandwiches, as they always tried to slip in sliced beets.

To sum this up, I can do no better than to quote a lady with whom I chatted in a tea shop: "Yehz, ah reckon Tassie is a pretty nice little island."

Reuben Hatch of Vancouver, Washington, retired recently after many years as a commercial rhododendron grower. An avid hiker, he often travels in North America and abroad to view plants in the wild and cultivation. He is best known internationally for his introduction of *Corydalis* 'Blue Panda', which he discovered on a 1986 trip to the Chinese mountains.

Further Reading

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More titles are available from Hobart Bookshop, 22 Salamanca Square, Hobart, Tasmania 7000, Australia; <hobooks@ozemail.com.au>.

A Lazy Man's Scree

Loren Russell

Destruction

The laziest thing about my latest garden project was the length of time—more than 12 years—that I procrastinated over doing it. When my wife, Flo, and I moved to our present residence in 1990, I immediately imagined rock gardens rising on either side of my long, sloping driveway. Within two years, I began developing the terraced wall that now extends the length of the west side of the drive. Then, about five years ago, I built a dry sand bed on the upper, flatter area along the east side of the driveway. But the lower east side, farther from my house, remained an old-growth wilderness of cherry laurel (*Prunus laurocerasus*) and foot-deep ivy, planted in the 1950s by the original owner of our house, a horticulture professor who obviously specialized in plant-and-forget landscapes.

Over the years, my phytocidal intent toward the laurels and the ivy waxed and waned. They didn't look too bad, but they occupied a choice site for a rock garden. This aesthetic balance shifted as the laurels became straggly, sunburned, and chlorotic, and the ivy turned arborescent—the stage where ivy bears flowers that attract millions of flies, and then fruits to spread its noxious offspring through the woods. These plants were living on borrowed time, surviving not at the mercy of the master but through his inertia.

The end came not swiftly, but decisively. On a sunny, frosty day in late December, I grabbed a thermos of mulled wine and a bow saw and delimbed the laurels. Now that they were mutilated, they would have to go. I undermined the laurels one by one. Removal of the first stump was comical. I thought it was loose, and I tried the lazy man's approach—attaching a rope to it and pulling it with my truck. Of course, the taproot held, the rope snapped, and on the rebound, a good-sized laurel branch flew off over tree tops. I reverted to hand tools and muscle power for the rest of the project!

Construction

The turning point in any project comes not at the midpoint in time or space, but at the point where you can see a prospect for improvement. For me, this happened when, with my pickup loaded high with laurel and ivy, I tipped the last

and largest laurel stump into the truck bed. Using leverage, gravity, and plant judo, I inched the heavy stump upward on my back and then rolled with it into the truck bed with my feet in the air, so that I probably looked much like an out-of-control dung beetle. But this was the last stump, and now I could finally see the contours of my site, so long buried. Only when the site was cleared did I realize what a huge expanse I had: an area roughly 40 feet long and 12 to 24 feet wide (about 13 m long and 4–8 m wide), with a narrow extension along the boxwood hedge some 35 feet (12 m) long and 6 feet (2 m) wide.

To proceed, I needed rock to match the porous basalt used in the wall garden across the driveway. Since this basalt came from a Forest Service permit quarry in the Cascades that is normally under snow from November through May, it seemed that I would have to wait until late spring. However, my luck continued; in early February, just as I reached this stopping point, warm rains washed out the last of the scanty snowpack at the lava flows. I took the opportunity and drove to the quarry for a load of thirty-odd good-sized rocks. These, with a few leftover rocks from the wall construction and two railroad ties, were enough to stabilize the slope. I had trouble in sketching an outline for the garden at this point, but I found it easier to visualize after roughing in access steps near the street. With the steps as a fixed point, and with the timbers set across the slope at the places most vulnerable to erosion, the rocks seemed to set themselves in irregular, widely spaced lines at an angle to the slope. With the first rocks in place, I could start on my scree. (Photos, pp. 282–283.)

The Scree

A proper scree ought to be at least a foot (30 cm) deep, but this was to be a lazy man's scree, really an extension of the dry sand garden upslope from it. I had in mind an expression of a Mediterranean cistus scrub like those I'd seen in Corsica and Spain: cistus, lavenders, thymes, and lots of bulbs on the flatter area on top; and lower-growing rock plants on the steep slope near the drive. This was a difficult spot to irrigate, and with a western exposure, sheltered from cold east winds by a boxwood hedge, it was promising for Mediterranean material. I would still need good drainage to allow these plants to cope with Oregon winters, longer, colder, and wetter than in most of the Mediterranean basin.

Even with the slope and the sunny, airy site helping drainage, the clay soil—though it would hold enough summer moisture—would have to be dealt with. My garden is on the lower slope of a hill of mudstone formed of acidic volcanic ash, leached, weathered, and leached again. The poor soil developed over the mudstone had not been improved by added subsoil from basement excavations. Though my planting wouldn't require a rich soil, I did feel compelled to improve the clay by forking in the leafmold I found under the laurels, along with an inch or two of yard-waste compost.

As I contoured the slope, I found that some of the clay had to go. An easy-going sand and gravel company nearby accepts waste soil in its dumping area, so

I started a shuttle process, hauling away pickup loads of the worst gooey clay and returning with loads of washed river sand and half-inch gravel.

I built my scree in layers. After carefully positioning my truck, I tossed the sand or gravel directly over the scree area with a shovel. I would apply a cubic yard of sand, one of gravel, a wheelbarrow or two of my stockpiled scoria (red lava) sand, and some dollops of dolomitic lime and leaf compost, and then I mixed it all together with a garden rake. I laid down the lazy-man scree layer by layer to the desired depth, hardly 3 inches (7.5 cm) on the sloping areas and no more than 6 inches (15 cm) deep anywhere. With another pickup load of basalt rocks on hand, I completed the steepest north-facing slope at the street and rocked in my access steps with slabs set in concrete.

The Flats

With the scree finished, the areas behind it took shape in my mind. These were a level rectangular area just above the old laurel thicket and a long, narrow strip between the existing dry sand garden and the boxwood hedge. A path through the garden asserted itself, and from this path came the contours of the remaining garden beds. Scattered taller shrubs massed near the midpoint of the hedge would balance the expanse of low mounds before them. These shrubs would also hail from the Mediterranean, but they would need a richer, deeper soil. I turned to my favorite resources for building raised beds: the disposal areas for sod at a nearby golf course, and discarded peat-pumice potting soil at a local greenhouse complex. (I've been warned by other gardeners that materials from a golf course would likely be phytotoxic, and that the greenhouse spoils might also introduce diseases. However, the staff of both operations have assured me of the material's safety, and I've never had plant losses that could be attributed to residual herbicides in this or previous projects using the same materials.) I laid down an initial layer of upside-down turf, then a mixture of the potting soil and scoria sand. I incorporated large pieces of decaying oak in the bed to stabilize the slope and act as "nurse logs" for the shrubs.

The Garden Rises

My lazy man's scree is just a few months old as I write this in the summer of 2003, and most of the plants in it are still small, but it already has a huge impact on my landscape. It mirrors and softens the wall garden opposite it, opens up the front garden, and makes both sides appear "organic to the site." My front garden now presents an open face to the neighbors and passers-by. They can now see more of the bold colors of the older wall, but their attention is drawn to the silver foliage and bursts of purple, pink, and yellow flowers, and on warm days to the exotic scents of my new planting. The scree harbors a wide variety of mats, cushions and low shrubs, including genistas, helianthemums, thymes, arenarias,

Onosma alboroseum, *Antirrhinum sempervirens*, and the prostrate *Cistus clusii*. Smaller plants—pinks, veronicas, *Paederota bonarota*, and *Pelargonium endlicherianum*—were inserted in crevices and in the lee of isolated rock bands, while a few larger plants such as *Digitalis obscura*, *Lavandula stoechas* 'Otto Quast,' *Convolvulus cneorum*, and the astonishingly silver *Helichrysum heldreichii* provide vertical elements. Their silver and gray foliage is echoed by mounding and mat-forming composites: *Achillea clavennae*, *Anthemis marschalliana*, and *Chrysanthemum hosmariense*. Behind them are more lavenders, rosemary, teucriums, and cistus in variety (5 forms of cistus, 3 *Halimium* species including the large, choice, but possibly tender *H. atriplicifolium*, and forms of \times *Halimiocistus*) continue the theme in a shrub planting. There are openings for low-growing plants like *Campanula hawkinsiana*, used here as an annual, and for bulbs, including treasured seedlings of *Pancratium illyricum*. At the upper end of the scree, just below the sand garden, a bed is anchored by a silvery chaste tree (*Vitex agnus-castus*) underplanted with *Iris unguicularis*, *Dictamnus albus*, *Ononis rotundifolia*, and asphodels. I expect that I will need to renew or replace some of the cistus and other shrubs periodically to preserve space for a mix of smaller plants. (Photos, p. 283.)

The upper shrub border will require drip irrigation at least in the first year; it incorporates a strawberry tree (*Arbutus unedo*) at its midpoint, a pomegranate, *Viburnum tinus*, and tall heaths (*Erica arborea*, *E. lusitanica*, and *E. terminalis*). Underplanted here are hellebores and many geophytes such as anemones, cyclamens, and *Lilium candidum*.

Have I created a rock garden, or is this just a Mediterranean xeriscape? Though it is nowhere alpine, incorporates a minimum of rock, and includes many rather large shrubs and many species of questionable hardiness, it derives from my sense of the aesthetics and the practice of rock gardening. Its form is naturalistic, to the extent that this is possible in a composition of rock many miles from its geological source and planted with species from another continent. Although my geographical theme may seem pedantic in concept and rather diffuse in application (a core of plants from the western Mediterranean is now joined by Balkan and Turkish species), it gives ecological and aesthetic coherence to what is otherwise just a collection of plants. I've included a number of cultivars and hybrids, and there is massed color intended to be visible at a distance, but this garden emphasizes the particular: the forms of individual plants and of single flowers. It is this attention to particularity, and an ecological sense of our garden plants as real organisms, each with its adaptive zone, that characterizes rock gardening wherever it is practiced.

Loren Russell of Corvallis in Oregon's Willamette Valley authored the chapter on the Pacific Northwest rock garden in the new NARGS book *Rock Garden Design and Construction*. He is well known for his generous contributions of wild-collected seed to exchange lists and recently guided the NARGS Wallawas expedition.

Musings from a Rock Garden: Summer Blues

Alexej “Sasha” Borkovec

July is a tough month in metropolitan Washington, D.C., and some plants in the rock garden just can't make it. It is a miracle that so many are still alive, and some even appear not to mind the dreadful three H's: hazy, hot, and humid. My guess is that fewer rock garden plants bloom at this low elevation during the last week in July than in any other week from April to October; therefore, my sighting of two blue spots in one of the sunny raised beds was a most welcome surprise.

The first blue spot, about 20 by 20 cm (8 by 8 inches), was formed by around 30 bright blue flowers of *Evolvulus arizonicus* (Convolvulaceae; photo, p. 286), native to Arizona and New Mexico. This rather tender perennial must be grown as an annual in our area (USDA Zone 7b). From a central rootstock rise many very thin stems with entire, oblong leaves as long as 3 cm (1.2 inches). The flowers are 15–17 mm (about half an inch) wide, with a flat, five-angled corolla of pale China blue, with a distinct white center and fine radial white lines. The pedicels are fairly long and hair-thin, and are attached to the main stem at the leaf nodes. Although the flowering stems may be as long as 25 cm (10 inches), they are decumbent, and the entire plant is seldom over 10 cm (4 inches) high. The flowers open early in the morning and close late in the afternoon—earlier on very hot, sunny days. Although most of the flowers will not open again, new ones replace them, and so the show continues for several weeks, into the second half of August. Then the tiny seeds should be collected to be sown next spring. Sow the seed very thinly, because the small seedlings are difficult to separate if they are crowded. Although none of my plants has ever survived a winter, occasional survival has been reported in a Virginia garden, only 20 miles south of here. Owing to the extreme thinness of the stems, propagation by cuttings may not be possible. In my garden, self-seeding was unreliable. *Evolvulus arizonicus* will grow in any sunny, well-drained site, but it may need some watering during long dry spells. Rock gardeners sometimes frown on annuals, but the areas where early spring bulbs have flowered become bare by the end of May, and late-flowering annuals are the best solution.

The second blue spot I saw was occupied by an entirely different plant, *Gentiana septemfida* (photo, p. 286). This eminently consumer-friendly gentian is a well-known and beloved perennial, tolerant of heat and humidity and, once established, seemingly immortal. And what a magnificent plant it is! If you have several of these, as I do, along with closely related plants at different locations, chances are that their blooming periods will be staggered, and that beginning about July 10 you will enjoy about four weeks of their blue beauty to help you over the worst part of summer with your spirit unbroken.

Gentiana septemfida rises in late spring from a central stock of thick, white roots. A good specimen will have as many as 20 gracefully decumbent stems with many shiny green, opposite leaves, forming a low mound. If it is planted in a sun-facing crevice or wall, the stems will overflow like a green waterfall. The flowers, which are borne in the leaf axils as well as in terminal clusters, are 3–4 cm long bells in various shades of blue, more or less hairy inside. There are areas of white in the throat and sometimes on the curved tips of the petals. I suspect that at least some of this species's considerable variation, especially in flower size and color, is influenced by soil and aspect. I admit that *G. septemfida*'s blue is not what one could call the true "gentian blue"; that distinction must be reserved for *G. acaulis*, *G. verna*, and a few others. But it is a pleasing blue, quite different from the blue of *Evolvulus arizonicus*, much darker and with a hint of red that seems to diminish in the sun and as the flowers age.

Like most other gentians, *G. septemfida* produces copious seed that germinates well if sown in winter or early spring, but I have never noticed it self-sowing. The seedlings grow very slowly and shouldn't be transplanted before September; better yet, the entire pot of seedlings should be overwintered in a cold frame. The plants will flower when three years old and can be kept going for decades. Old plants can be lifted and divided when growth starts in spring, but be prepared for long roots.

Inexperienced rock gardeners are sometimes awed by gentians, considering them difficult, finicky, or impossible to keep for more than a year or two. Although there are a few among the more than 300 species that deserve this reputation, there are many that are just the opposite: easy, long-lived, and still beautiful. *Gentiana septemfida* certainly belongs to the latter group.

Sasha Borkovec, having successfully conquered his mortal enemies, the deer, by installing a deer-proof fence, gardens and writes peacefully in Silver Spring, Maryland.

NARGS National Awards, 2003

Two national awards were presented at the Annual General Meeting in Breckenridge, Colorado, in July 2003. The Society offers several different such awards to recognize particular qualities of service to the rock gardening community. Recipients may be nominated by any member, and the nominations are then reviewed by the Awards Committee (see the inside back cover of this issue for the current Awards Chairperson). The criteria for the various awards are described annually in the *Bulletin Board*, the administrative newsletter that is mailed with the *Rock Garden Quarterly*. No nominations were received in the preceding year for some of the awards; members are encouraged to review the criteria and propose appropriate recipients.

Marvin Black Award: Joyce Fingerut

Translating the official requirements for this award into the vernacular, we understand them to mean that NARGS must be the recipient's religion. Recipients may or may not believe in other things, but they must believe in NARGS and evangelize for it.

Joyce Fingerut received horticultural training at the Barnes Arboretum in Philadelphia and in the early 1980s joined the Delaware Valley Chapter, of which she remains a devoted member. She was always involved in the hands-on work of the chapter as well as its management positions. While she was program chair, she brought distinguished and distant speakers to the chapter, and she and her husband, Jerry, frequently hosted them too. She left a huge list of potential speakers for her successors. Later, Joyce became chairperson of the chapter.

A major annual outreach program of the Delaware Valley Chapter is participation in the Philadelphia Flower Show, a prime occasion for publicizing rock gardening and its organizations. Joyce worked in design, coordination, and staging. When the DVC hosted the seed exchange, Joyce was a constant and steady worker. Joyce was involved in all the study weekends organized by her chapter; she was registrar of the 1986 meeting, in charge of the Garden Fair in 1989, program chair in 1997, and program planner/coordinator for 2004.

On the national level, Joyce joined NARGS in the early 1980s and served on a number of committees. She was elected vice president and then president. Her management was effective and efficient. She faced a number of tricky situations and defused them with skill. She is particularly remarkable for being not just a caretaker-manager, but a self-starter with ideas and the ability and determination to execute them.

Joyce sparked or organized a number of initiatives. Perhaps most prominent is the speakers' program, which makes it possible to "share" renowned speakers with smaller and remote chapters. This initiative has affected the programming of every chapter. Joyce also developed a speaker's bureau, so that program chairs have somewhere to look for excellent speakers.

Last year NARGS suddenly faced the dreadful U.S. Department of Agriculture phytosanitary enforcement proposals, which, in their original form, would certainly have killed off our seed exchange. Joyce took it on herself to approach various authorities, to work with them, and to organize effective responses to the enforcement proposals. The eventual outcome should be much more benign than the original horrors, and a great deal of thanks for this will be due to Joyce Fingerut.

For quite a while, it seemed as if the 2006 Interim International Rock Gardening Conference—one of a series of grand meetings scheduled to take place once every ten years—would not happen. But Joyce refused to give up. She set out to scout out possible locations, researched alternative formats, and solicited local help. The end result is that we are going to have a tremendous event centered in Utah, with a unique format. This simply could not have happened if Joyce had not taken the initiative.

Joyce Fingerut is the co-author of the popular book *Creating and Planting Garden Troughs*, and she graciously distilled her knowledge of that subject for the new NARGS book *Rock Garden Design and Construction*. She also put together a NARGS membership promotional booklet which has been sent to each chapter. She has lectured at a number of chapters and has given workshops for NARGS and other organizations. Her presentations are informative and entertaining, and totally lacking in self-puffery.

As one of the converts to Joyce's religion, I am delighted that she has been recognized by the Marvin Black award.

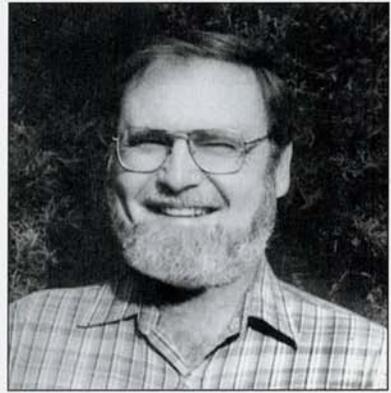
—Andrew Osyany, Shelburne, Ontario

Award of Merit: Tony Reznicek

There is no question that Tony Reznicek is the glue that helps hold the Great Lakes Chapter together. He has served as president and as newsletter editor. With his considerable help in writing, planning, and organizing, the chapter thrives. Tony and his wife, Susan (who chaired the 2003 Eastern Winter Study Weekend), had many good ideas that led to the Weekend in Ann Arbor being an orig-

inal and successful event. He presented the keynote address, was co-presenter for one workshop, and provided the wrap-up presentation. He spent a lot of time speaking to other garden groups about attending the study weekend, generating several new members for NARGS.

Tony Reznicek is Adjunct Professor at the University of Michigan, where he is Curator of Vascular Plants at the Herbarium. His research interests include systematics and evolution of the large and complex genus *Carex* and the phytogeography of the northeastern American flora, concentrating on the Great Lakes region. Tony frequently travels to botanize other places, with a particular interest in Mexico. He is a lifelong conservationist and serves on various endangered species and land protection committees in Michigan and elsewhere. He is also a member of the board of trustees of the Michigan Nature Conservancy. Tony is a principal contributor on the genus *Carex* for the *Flora of North America*, and he has authored several articles in the *Rock Garden Quarterly*.



Tony's extensive knowledge of plant identification and sites makes him a natural choice for leading groups to view plants in their native habitats. He often generously does this for the Great Lakes Chapter and many other groups in Michigan and in Maine, where he also teaches. Going on a walk with Tony includes many things—like getting your feet wet. I don't think there is a bog or fen that he won't hike through. Don LaFond recalls a trip they took to the Maitland River gorge in Canada, on which they crossed the wide river four or five times, while Tony provided an almost continuous description of plants and geography, with a little humor included. Don found it a memorable experience—especially eating in a restaurant afterward, smelling like a wet dog.

Tony's generosity with plants and his skill in growing them are instrumental in getting and keeping chapter members. He enjoys growing difficult and unusual rock garden plants, and he has developed some unique ways of creating and exploiting microclimates. He freely shares both plants and knowledge with both individuals and nurseries. This willingness to share information and his garden encourages people to try many unusual little treasures.

Tony Reznicek's knowledge and generosity are driving forces in his chapter and NARGS more generally. He well deserves the Award of Merit.

—Michael Kaericher



Two views of the fern grotto Louise Parsons created from an old fish pond (p. 243). Above, the fern-dotted rock wall; below, *Cheilanthes fendleri* (left center) and *Cheilanthes wootonii* (right center; p. 245) enjoy a relatively dry and well-lit part of the grotto. (photos, L. Parsons)





The fern grotto, with the shining foliage of *Blechnum wattsii* (p. 245). (photo, L. Parsons)

Phyteuma scheuchzeri (p. 251) adds a note of blue to plantings in Eva Gallagher's shady rock wall.
(photo, E. Gallagher)





Saxifraga xurbium 'Clarence Elliott' (above left; p. 250) is a perfect plant for the shaded wall (photo, E. Gallagher). *Athyrium filix-femina* 'Frizzelliae' (above right) is an unusual, slow-growing form of the lady fern (L. Parsons).

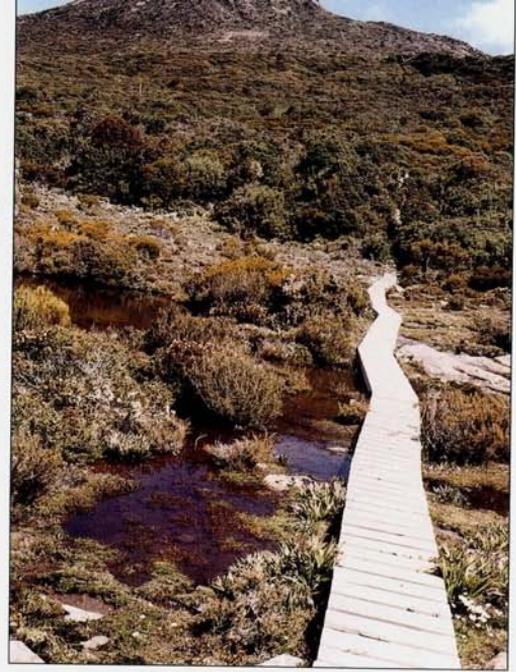
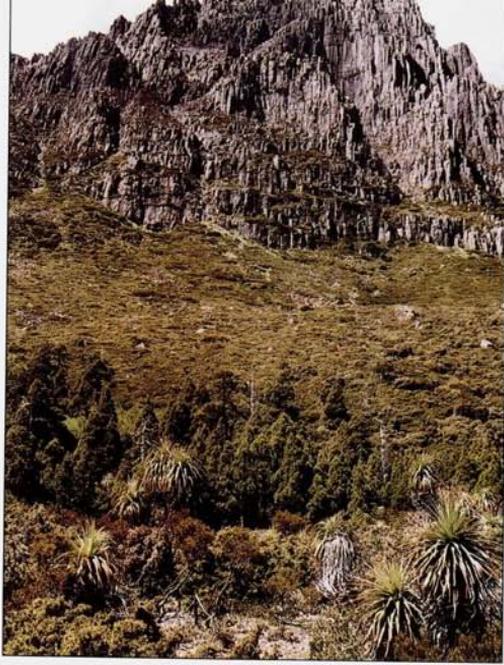
The base of the shaded wall in the Gallagher garden (p. 249) features *Primula kisoana*, *Saxifraga cuneifolia*, and encrusted silver saxifrages. (E. Gallagher)





Tasmania's alpine moors host colorful *Richea scoparia* (p. 256); below, another color form. (all photos of Tasmanian plants, Reuben Hatch)





Cradle Mountain (above left; p. 260) is a premier hiking destination in Tasmania. Many trails in the island feature boardwalks like this one on Hartz Mountain (above right; p. 260).

Richea pandanifolia (p. 256) is prominent at mid elevations.





Tasmanian alpine plants form mats and cushions of varied textures. Above, *Gleichenia alpina* (p. 258); below, *Ewartia meredithiae* (p. 256).





Donatia novae-zelandiae (above; p. 256) and the dwarf shrub *Eucalyptus vernicosa* (below; p. 257).





A tapestry of dwarf woody plants in Tasmania's mountains, including *Dracophyllum mniimum* (p. 256) at upper left.

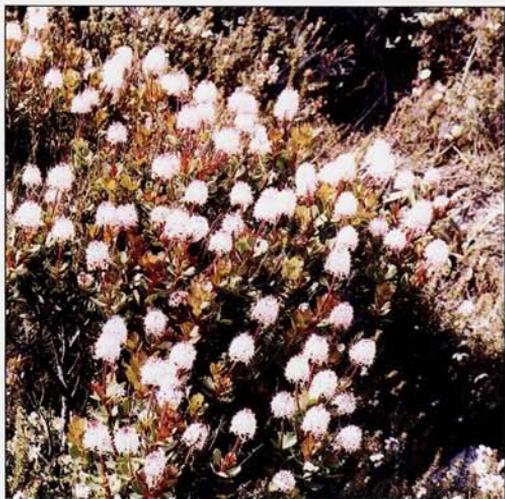
A species of *Euphrasia* (p. 256), a genus of showy semi-parasitic alpine plants.





Above left, *Blandfordia punicea* (p. 257); above right, *Celmisia saxifraga* (p. 256).

Below left, *Bellendenia montana* (p. 257); below right, *Stylidium graminifolium* (p. 257).





The “lazy man’s” scree (p. 264) shows how a limited amount of rock can be used effectively. Above, building the feature in March 2003; below, the area newly planted in May 2003. (photos, Loren Russell)





The new scree is planted with Mediterranean species that have been given plenty of room to grow, an important consideration when dwarf shrubs are used. Below, low-growing perennials offer bloom the first season, including a lavender *Centaurea* species, yellow *Scutellaria orientalis*, blue *Dracocephalum ruyschianum*, and a white-flowering *Antirrhinum* species from Spain. (L. Russell)





Glaucidium palmatum in a deep purple color form graces the spring landscape in Barrie Porteous's Ontario garden (p. 291). (photos, B. Porteous)



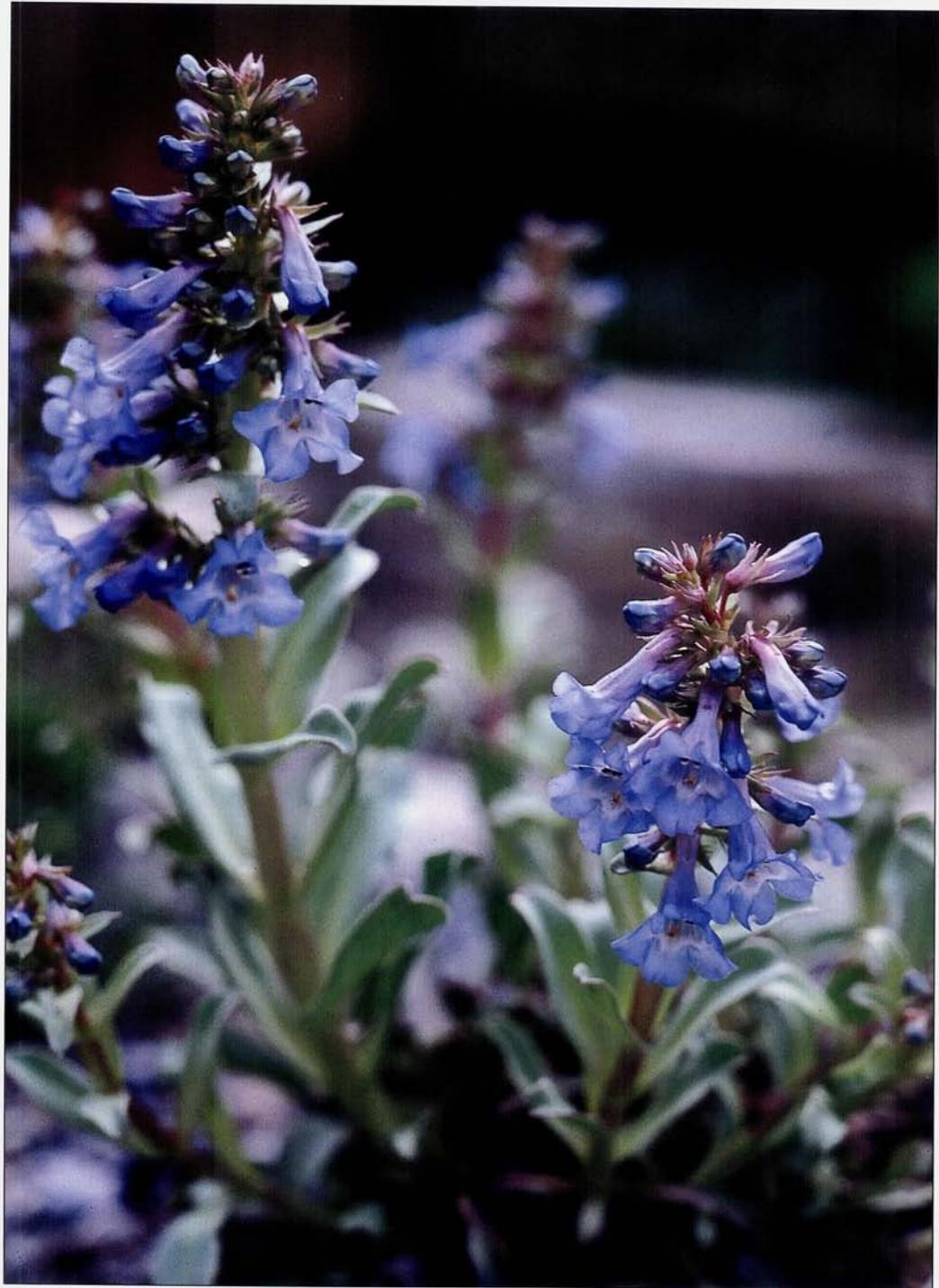
Above, the typical lavender form of *Glaucidium palmatum*; below, the white form.





Summer blues in the garden of Alexej Borkovec (p. 268): above, the annual *Evolvulus arizonicus*; below, *Gentiana septemfida*, an easily grown gentian. (photos, A. Borkovec)





Penstemon nitidus, a gem of the genus (p. 293). (photo, Anna Leggatt)



Above left, *Mertensia ciliata* (p. 290) at Loveland Pass, Colorado (photo, Sue Osyany); above right, *Mertensia viridis* (p. 291) in the Bighorn Mountains, Wyoming (photo, David Hale).

Below, *Mertensia alpina* (p. 290) on the Beartooth Plateau, Montana (photo, David Hale).



Plant Portraits

Mertensia notes

ANDREW OSYANY, Shelburne, Ontario

There are about fifty species of *Mertensia*, a genus of the temperate Northern Hemisphere, and they are all perennials. Plants tend to be fairly leafy. The flowers, generally bell-shaped, are borne in clusters along the upper parts of the main stems and side shoots. The principal flowering time is spring.

Blue is the color most associated with the genus, but the literature also records pink, yellow, and white. I have not yet seen any yellow or white forms, only blue and pink. All the colors I've seen have been of good quality—nothing dingy. In common with some other plants in the borage family, they may appear one color but open another. There is sometimes a lovely color gradation from the rim of the bells to the bottom of the calyx.

In our garden

The biggest species that I know and grow is *Mertensia virginica*, which can exceed 150 cm (60 inches). It bears large clusters of flowers atop the stems, and the plant makes an attractive clump. By the early part of July the plants go dormant and totally disappear. The “Virginia bluebell” is native in the southwestern counties of Ontario, but so far I have seen it in the wild only in the Allegheny Mountains of Pennsylvania, forming wonderful sheets of bloom in deciduous woodland in early spring. Though it's supposedly a common plant, I had quite a hard time getting hold of it. It is likely to self-sow after a couple of years.

All the other mertensias that we have reside in our “scree,” which consists of a lower layer of clay-based subsoil covered by several inches of gravel, descending in several steps from beside the house to ground level, approximately 1.3 m (4 feet) below. This environment suits them. The gravel keeps the subsoil nice and moist, so that the plants' roots never dry out too much.

Among rock gardeners, probably the best-known species is *Mertensia sibirica* (syn. *M. pterocarpa*). From the descriptions and queries circulating among rock gardeners, it seems that there are particularly attractive and floriferous selections of this species. This plant is quite adaptable, happy just a few feet inside the

edge of one of our woodland beds but flowering much better and longer in the sunnier scree. Its basal leaves are cordate (heart-shaped) and brownish green, but the more juvenile foliage has a distinctly glaucous cast. (All the other mertensias that I know have lanceolate leaves.) The best bloom is in spring, with sporadic bloom persisting for much of the season. Our scree plant has now produced dozens of seedlings. We have never trimmed the plant, but cutting it back would tidy up the flopping 50-cm (20-inch) stems and restore the original little mound. This is a substantial plant, not for a typical trough. Our original plant came from the late Norm Coombe; sadly, by now a number of our plants are memorials rather than just gifts.

We also grow *Mertensia alpina* (photo, p. 288), which (like many excellent members of this genus) comes from the North American West. This plant, quite a bit smaller and "slighter," blooms only in spring. Because of its size, it can be accommodated easily in a small rock garden. Very lovely there, it is beautiful in the Rocky Mountains too, where Kodak and Fuji apparently send out teams with packets of seed, sowing the stuff on the high hillsides. The *Harkness Seedlist Handbook* mentions, in its usual shorthand, "fls double"; I am not sure if this is meant to say that the bells come in pairs, or that each flower bell is double-petaled, but I have certainly not seen the latter.

Mertensia lanceolata is a bigger plant on its native mountainsides in the Rockies, but in our scree it has remained small, elegant, and ever so different from the other species. It goes dormant in our garden in summer.

Mertensia ciliata (photo, p. 288) is widespread in the West, and quite variable. The form we have is under 30 cm (12 inches) tall and has reasonably attractive flowers.

Mertensia maritima inhabits a circumboreal range including northern Europe and the North American Arctic, growing on seashore sands; its subspecies *asiatica* is native to eastern Siberia and northern Japan. I raised it from Iceland-grown seed. It succeeded in our scree but did not persist; we are not sure if it was "crittered" out of existence or not (it is well known as "slug candy"). When we get more seed, we will try again. The combination of pure blue flowers and extremely glaucous foliage is worth great effort.

Blooming here for the first time in 2001 was the Himalayan *Mertensia echioides*. Quite different-looking from the North American species, its flowers are smaller, but they are distinct in their deep, intense, almost velvety black-blue. The flowers are borne on rather bare scapes well above the foliage. We have transferred one clump to our mertensia collection. This is the latest fashion with us—combining drifts of the species of one genus. To heck with geographical plantings! Family plantings are equally scientific, and far more pleasing aesthetically. Sadly, none of these Himalayan mertensias came back the following year.

Mertensia primuloides came to us from Wrightman Alpines. Although this Himalayan plant is reported to be white, yellow and blue in its various incarnations, Harvey Wrightman carries only the blue form. It is a neat little plant.

My wife, Sue, and I have seen many different mertensias in many different mountain ranges of the West. She once spotted a lovely pink-flowered one amid

a sea of blue on Gravelly Ridge in Montana. Mostly, we have not bothered to key out the particular species. At the highest elevations you find the small *M. alpina*, and at lower elevations in the Rockies *M. viridis* (photo, p. 288) and *M. ciliata* are widespread. We like all the mertensias we have seen, but I want to mention one in particular.

Mertensia bella is narrowly distributed in Oregon. It grows in the shade (unlike all the other mountain species I have seen) in wet conditions, and it goes dormant in the dry summer. A small, utterly delightful and desirable plant, this is high on my wish list.

Cultivation

Ample spring moisture seems essential for mertensias, both in the wild and in the garden. The wet-knee test works: if you've got wet knees while gardening there, the spot is suitable for mertensias. I'm not sure about late-season conditions, but the areas where they grow in nature generally look like they would be very dry from early summer on. In the mountains, mertensias can take a fair bit of competition from neighboring plants.

Apart from the Wrightman acquisition, everything else that we now have "in the works" came from seed. In addition to the usual seed exchanges, check the lists of Gardens North, Rocky Mountain Rare Plants, and Northwest Native Seeds. Seed collections tend to be sparse, and some years the exchanges offer no mertensias. I have seen no listing for *M. bella*, but I keep hoping. The seed ripens over an extended period; while you are waiting for the bulk of the fruits to dry, a few sneakily pop open. Germination of stored seed can be poor in alpine species, though *M. pterocarpa* and *M. maritima* usually germinate well.

Glaucidium palmatum

BARRIE PORTEOUS, Richmond Hill, Ontario

Thanks to the generosity of gardeners, over the years I have been able to obtain a number of really choice plants. In the late 1980s, Vera Peck gave me a pot of *Glaucidium palmatum*; about the same time, Mike and Polly Stone in Scotland sent me its white form, *G. palmatum* f. *leucanthum*. I planted both of them at our cottage in Muskoka, Ontario, and they have thrived ever since (photos, pp. 284–285).

The conditions at the cottage, which is located in USDA Zone 3b/4a, seem to suit the glaucidiums very well. The soil is acidic and not very rich because the glaciers of the last ice age stripped most of the good stuff away. Summer temperatures rarely exceed 80°F (27°C), and rainfall is fairly frequent during that season. Each October, I rake the leaves from beech, birch, and oak trees on top of the plants, which I hope provides nutrition and also some protection from the early cold snaps that we tend to get in December. The entire plant dies to the ground by late fall and doesn't reappear until early to mid-May, depending on the weather.

There is obviously a relationship between the amount of sun that a plant receives and the amount of moisture it therefore needs. Most of these glaucidiums are growing in dappled shade and never get any extra watering, but of course they are mulched by the previous fall's leaves. It is likely that hot, dry summers would cause them considerable stress and perhaps even make it impossible to grow them successfully. Occasionally my plants dry out to the point that they collapse. Usually a good soaking brings them back up, but they obviously don't appreciate this sort of treatment and tend to sulk for the rest of the summer.

Glaucidium sets copious amounts of seed, usually 15 to 30 seeds in each of the twin pods. Although it is possible to grow plants from stored seed, its germination tends to be erratic. If you can obtain fresh material, then the germination rate tends to exceed 50 percent, which will allow for some experiments planting the seedlings in different combinations of sun, shade, and moisture. There isn't much point in throwing the ungerminated contents of old pots of cushion alpiners into the garden in hope of germination, but large seeds like those of peonies and glaucidium can still come up after a number of years, even after they have been buried. Some sources also suggest propagating this plant by taking basal cuttings in late summer, but I have not tried this.

The largest of my mature plants is 15 years old, 32 inches (80 cm) tall, and 60 inches (150 cm) in diameter, with leaves up to 16 inches (40 cm) wide. Most of the others are about two-thirds this size, but even their dimensions are much larger than those mentioned in the literature, suggesting that my plants are especially happy with their growing conditions. They never seem to be affected by insects or disease (though in warmer climates, slugs are said to relish them) and are pretty well ignored by me except when they are in bloom.

Anyone reading descriptions of the color of the flowers is bound to be confused. Pink, pale lavender, pale mauve and pale lilac pink are all mentioned. It is certainly one of these tricky colors to name, made worse by the fact that the blue element isn't picked up on most photographic films, which causes the photographed flowers to look more pink. Shooting with a polarizing filter sometimes helps. The flowers can be as much as 4 inches (10 cm) in diameter for the typical form; those of forma *leucanthum* are generally somewhat smaller. Petal shape varies; some plants have petals that are quite rounded, and others, more pointed petals. The flowers of some plants are solidly colored, while others have a noticeable white center and darken toward the outer margin.

Over the years, the botanists have bounced *Glaucidium palmatum* in and out of different plant families. It could be found, at various times, listed under Ranunculaceae, Glaucidiaceae, and Paeoniaceae. Josef Halda, in his forthcoming monograph *The Genus Paeonia* (with James Waddick; Timber Press, Fall 2003), lists it in the Paeoniaceae. He also describes *Glaucidium pinnatum* from Sichuan Province of China, a similar plant with smaller, pink flowers. *Glaucidium palmatum* comes from Hokkaido, the northernmost of the Japanese mainland islands, which partially accounts for its hardiness. Last winter, all of the plants at Muskoka survived night temperatures that hovered near -40°F (-40°C) for weeks on end, albeit with good snow cover.

Penstemon nitidus

ANNA LEGGATT, East York, Ontario

Penstemon nitidus is my favourite penstemon (photo, p. 287). It flowers early, in late May in Toronto, with electric turquoise-blue flowers above blue-green leaves. My plant grew to 7 inches (18 cm) tall, with woody stems curving out from the crown for about 2 inches (5 cm) before rising upward. The thick, glaucous leaves clasp the stem in pairs; they are strap-shaped, with entire margins. I think my plant was *P. nitidus* var. *nitidus*, judging by the illustration and drawing in Dee Strickler's book *Northwest Penstemons* (Flower Press, 1997). The upper halves of the stems are densely covered in clusters of small, typical penstemon flowers of an almost indescribable blue, with white throats. The buds are slightly darker in color.

Penstemon nitidus is found in the wild from Alberta and Manitoba south to northern Wyoming, growing on dry hills and slopes, according to Robert Nold's book *Penstemons* (Timber Press, 1999). It is suitable for xeric gardens and troughs that can be protected from excess moisture.

I bought my plant at the NARGS Annual Meeting in Utah in 1996. It traveled home to Canada easily with a phytosanitary certificate. It grew happily in a crevice 2 feet (60 cm) deep, filled with gravelly loam above clay. Growing in full sun, it lived for four years, flowering for three weeks each spring. For the first two years, I had plenty of seed, which I sent to exchanges. Seed production was negligible the last two years.

I keep ordering seed of this penstemon from the exchanges. I plant all my penstemon seed in pots filled with damp Promix (a soilless product) and Turface (a commercial rocklike product used for drainage). These pots go outside in a sheltered position in January. Germination usually follows in late April; however, I keep the pots for a second year if no germination occurs. Germination of *Penstemon nitidus* has been poor, though I have a seedling waiting to be planted out in the late summer. I unsuccessfully tried propagating it by stem cuttings.

Plants are occasionally available from some mail-order nurseries, notably Beaver Creek Nursery in British Columbia. Look for seed in the exchanges, especially that of the Penstemon Society.

The books cited in this article are available from the NARGS Book Service.

Books

Cyclamen: A Guide for Gardeners, Horticulturists and Botanists, New Edition, by Christopher Grey-Wilson. Portland: Timber Press, 2003. 224 pp., 198 color photos, 37 drawings, 12 maps. ISBN 0-88192-587-X. Hardcover, \$39.95. Available at a discount from NARGS Book Service.

Reviewed by JOHN T. LONSDALE, Exton, Pennsylvania

The first edition of *Cyclamen* was eagerly anticipated when it was published in 1997, and justly so, as it has indeed proved to be the authoritative work on the genus. It describes the various species (comprehensively covering their distribution in the wild), taxonomy, cultivars, cultivation, propagation, and conservation issues. Beautifully illustrated, it is certainly the reference book of choice. The genus *Cyclamen* is relatively small, and, apart from certain recently proposed taxonomic changes, little of note has occurred in the period between publication of the original edition and this new one. It was thus with some surprise that I heard a second edition had been published, apparently largely driven by the taxonomic proposals and their impact on the nomenclature and hierarchy within *Cyclamen*.

The new edition has increased in size by 32 pages and has a different typeface and larger font size, which greatly improve its readability. It is also now easier to navigate within chapters and sections, courtesy of enhanced heading styles. The arrangement of chapters 1 through 12 is common to both editions, and the chapters have contents broadly similar to their counterparts in the first edition. Extensive details are provided on cultivation, pests and diseases, botanical structure of the plant, the species and cultivars, florist's cyclamen, hybrids, conservation, societies, and sources. The new edition differs mainly in the rationale for and descriptions of the "new" taxa, and these are reflected in the identification key. The major change in the Appendices is the elimination of the list of collectors' numbers, which is available online at the Cyclamen Society's website. The paper used in the new edition is heavier but this reviewer preferred the glossy finish in the first, which improved the clarity and visual impact of the many photographs.

The content remains very much focused on cultivation of cyclamen in the United Kingdom, particularly under glass. A worthy addition might have been

a discussion of cyclamen cultivation on a more global basis, incorporating the valuable experiences of non-U.K. growers. Cyclamen have greatly increased in popularity in the United States and in Australia and New Zealand, especially, and these countries have a huge climatic range which enables all of the species to be successfully cultivated outdoors—albeit not in the same place! Excellent sources of plants and seeds are now available worldwide.

The major taxonomic changes that have been incorporated into this edition include:

- the recognition of *C. elegans* as a distinct species;
- the upgrading of *C. repandum* subsp. *peloponnesiacum* to *C. peloponnesiacum* and the impact of this change on the remainder of the *C. repandum* complex; and
- the reinstatement of the name *C. alpinum* to replace *C. trochopteranthum*.

There are also several lesser changes. The proposal to recognize *C. elegans* has generally gained widespread acceptance, but the latter two listed above have not. Interestingly, the Cyclamen Society has decided not to adopt these latter changes and is maintaining the names *C. trochopteranthum* and *C. repandum* subsp. *peloponnesiacum*, at least until the results of several research projects have been evaluated. These projects include one that is looking at the use of names in the genus over the centuries, an effort instigated when it became clear that several names have been misapplied, particularly in recent publications. For example, *C. graecum* subsp. *candicum* was invoked in the first edition of *Cyclamen* and was subsequently changed to subsp. *mindleri*, but in the new edition it is now back where it started. In these days of rapid advances in the technology and techniques available for taxonomic research, and of differing schools of thought about how the data should be applied, a little breathing space is probably a good idea. Notwithstanding the above comments, Chris Grey-Wilson has done an excellent job tidying up the mess of validly and invalidly applied names at the cultivar and subspecies levels, suggesting alternatives which are consistently applied.

Without doubt, this remains the premier reference book for anyone with a significant interest in the genus *Cyclamen*. The nomenclature proposed in this second edition may be truly visionary, or we may need a third edition in short order. Time will tell.

The Color Encyclopedia of Cape Bulbs by John Manning, Peter Goldblatt, and Dee Snijman. Portland: Timber Press, 2002. 486 pp., 611 color photos, 2 maps. ISBN 0-88192-547-0. Hardback, \$59.95. Available at a discount from NARGS Book Service.

Reviewed by ALBERTO CASTILLO, Buenos Aires, Argentina

If most gardeners and even the non-gardening public alike were asked what country they associate in their minds with bulbs, the answer would invariably be

"Holland." Wrong, wrong! The right answer is South Africa, and particularly the southwestern corner of that country, where swarms of plant genera have evolved bulbous or "geophytic" forms: irids and amaryllids, as could be expected, but also orchids, geranium relatives, and even succulents. In all, there are around 2,000 bulbous species there, and new ones are being discovered every year.

With such a rich and diverse flora, botanists have only been able to produce partial works on different genera and families over many decades. Now, for the first time, we have a complete reference book embracing most of the bulb genera native to the Cape Floral Region: *The Color Encyclopedia of Cape Bulbs*. More than 600 species are dealt with in this monumental work in a single volume. The authors, Dr. Peter Goldblatt, the botanical genius working with the Missouri Botanical Garden, and Dr. John Manning and Dr. Dee Snijman, are the top specialists in this group of plants nowadays. They provide very detailed information on the families, genera, and individual species, as well as a fascinating introductory chapter in which the climate that shaped this unusual flora is discussed at length. Comparing one's own climate to these descriptions offers a hint about which species might be adaptable to one's own garden.

Information on the main aspects of cultivation is also included, as well as a section on synonymy. There is no general index, a common practice when the plant descriptions are alphabetical as they are here; however, because many genus names have been changed recently (largely through Goldblatt's taxonomic work with the Iridaceae), it would have been helpful to have a faster way of looking up a familiar name (e.g., *Homeria*, now *Gladiolus*; or *Anomatheca*, now *Freesia*) than by tracking it down in the index of synonyms. The best choice would have been to include "blind entries" or cross-references alphabetically within the text. The back matter is completed by an extensive bibliography for further reading, and lists of common names, nurseries supplying these plants commercially, and societies of bulb growers.

The section "Key to Species" is a book in itself, in which every species in the Cape Floral Region of South Africa is listed with its botanical characteristics described in detail. Every species of the more than 600 included is described in detail from the roots up so they can be accurately identified. In addition, the habitat of the species in the wild is described so conditions in cultivation can be adjusted accordingly, and the typical flowering time in the wild is also noted. Perhaps this serious botanical approach is what makes this outstanding work so useful for the grower of plants and lover of nature alike. Every year scores of books on plants with bulbs appear, but many of these can be characterized as "copies of copies of copies," endlessly recycling old information. In this case, however, we have an original work that will remain the standard for decades to come. (Omitted from this book are the genus *Oxalis*, orchids, and bulbous succulents, but they would account for another volume the size of this one.)

The illustrations are superb, showing portraits of hundreds of the species described as well as many stunning pictures of the plants in the wild. This fascinating book is highly recommended for the beginner, the experienced grower, the botanist, and the lover of nature.

The Genus Epimedium by William T. Stearn. Portland: Timber Press, 2002. 354 pp, 27 color paintings, 75 color photos, 31 line drawings, 7 b/w photos. ISBN 0-88192-543-8. \$49.95 hardcover. Available at a discount from NARGS Book Service.

Reviewed by DIANA REECK, Battle Ground, Washington

Epimediums have had something of a cult following among shade gardeners for many years. The current surge of interest in this genus, stimulated by the introduction of newly discovered species from China and numerous magazine articles, cannot help but be given a boost by this fully illustrated, definitive, monographic work.

William Stearn (1911–2001) had a deeply respected career as a botanical researcher and writer. He is perhaps best known for the classic reference *Botanical Latin* and the fascinating, enjoyable *Dictionary of Plant Names for Gardeners*. This work under review is an expanded and updated version of his original monograph on *Epimedium* published in 1938, when fewer species were known. With recent explorations in China, and through the efforts of a few dedicated epimedium enthusiasts, the number of species described in this revision has increased to fifty-nine.

Epimediums have a long botanical history, and in the chapter entitled “Historical Introduction,” Stearn tries to make sense out of the confusing mass of nomenclature and identification through the years, with references dating back to the first century A.D., including notes on some very interesting medicinal uses.

In addition to chapters on morphology and classification, a lengthy chapter is given over to a discussion of the evolutionary history and geographical distribution of the genus. This is a fascinating topic, especially for anyone interested in plant evolution, although it does help to have a working knowledge of geological timescale as one reads through it.

As would be expected, the bulk of the book is given over to detailed botanical descriptions of each species, along with a dichotomous key for aid in identification. Almost every species is illustrated by either a botanical drawing, a painting, or a photograph; some of the photos were taken in the plants’ natural setting in the wild. Capturing the charm and effect of epimediums in a photograph is notoriously difficult, but the pictures are lovely and do a fine job of showing the various flower forms; they illustrate the appeal that these plants have for gardeners.

This book does not stop with epimediums, but also covers other herbaceous genera in the Berberidaceae, describing and illustrating *Vancouveria*, *Jeffersonia*, *Achlys*, *Diphylleia*, *Ranzania*, and more. All of these plants are highly desirable from a gardener’s standpoint.

The extended section on *Podophyllum*, written by Julian Shaw, is of special interest. This genus of extremely garden-worthy plants has been almost unknown until recently, but with new imports from China it is proving to be one

of the showiest and most dramatic group of foliage plants to arrive in a long while.

The chapter on cultivation is too brief, but perhaps this reflects on epimediums' general ease of culture. If I have any disparaging remarks at all, it is that there is not enough information on hybrids and garden culture. With the current interest in this genus, and so many new species to work with, hybridizers are getting their hands in, so perhaps this is a subject for another book.

In spite of a few omissions (for example, no mention of *Epimedium grandiflorum* var. *higoense*), this long-awaited book will be indispensable to epimedium enthusiasts and a superb addition to any plantsperson's library. It will definitely stimulate the appetite of gardeners wishing to explore this extraordinary group of plants.

A source for epimediums

Collector's Nursery
16804 NE 102nd Ave.
Battle Ground, Washington 98604
www.collectorsnursery.com

Willows: *The Genus Salix*, by Christopher Newsholme. Portland: Timber Press, 2003. 256 pp., 65 color photos, drawings. ISBN 0-88192-565-9. Paperback, \$19.95. Available at a discount from NARGS Book Service.

Reviewed by JERRY J. FLINTOFF, Burton, Washington

This recently reprinted guide to growing willows, originally published in 1992, will be useful to the growing number of gardeners who are exploring the genus. Although the British author writes from the European viewpoint, he includes many North American species. The North American gardener can only envy the large selection of *Salix* species and cultivars available in Europe, since U.S. Customs rules bar the entry of willow plants into the United States. The notoriously short viability of willow seeds is another obstacle to introducing new material, although several Chinese species have been introduced recently via seed.

Aspects of culture, propagation, and the nonhorticultural use of willows for wood, cricket bats, basketry, and other crafts are adequately if not briefly covered. The heart of the text—details of the structure of the catkins and taxonomic classification—will guide the serious collector in the effort of identifying an unknown willow.

The author has conveniently listed shrubs and trees according to their suitability for very large gardens or estates, small gardens, rock gardens, and troughs ("sink gardens," as our British gardening brethren charmingly term them). Each species treated has a short but salient description of plant habit, and characteristics of stem, leaf, and catkin; many of the descriptions are accompanied by black-and-white drawings of the critical leaf and catkin characteristics that

define the plant. The 75 color plates are excellent. This book, unfortunately the only reference on the genus in print, can be wholeheartedly recommended.

Pulmonarias and the Borage Family, by Masha Bennett. Portland: Timber Press, 2003. 240 pp., 103 color photos, 35 drawings, 6 maps. ISBN 0-88192-589-6. Hardcover, \$39.95. Available at a discount from NARGS Book Service.

Reviewed by CARMEN VARCOE, Victoria, British Columbia

This book was a dream to review. It is not just a comprehensive work on the genus *Pulmonaria*, but also an excellent source of information on the classification, cultivation and propagation of many other members of the borage family (Boraginaceae). In the first 20 pages, Masha Bennett gives detailed information on the ecology, botany, and propagation of these plants. This book will be valuable to botanists as well as gardeners, since it covers all the descriptive features necessary for identifying these plants. I found the section describing "Raunklaer Life Forms" fascinating. This classification system is used to define the position of the resting buds, which is helpful when one is considering winter protection.

Whether you are just beginning to grow pulmonarias or are a seasoned grower of this genus, there's plenty here for you. The names in this genus have become terribly muddled in the horticultural trade, but there are good photos of pulmonaria leaves to help you sort out your own mislabeled ones. I especially valued the information Bennett gives on "related forms and cultivars." She provides a list of cultivars that are erroneously attributed to the *Saccharata* group but are in fact derived from *P. officinalis* and other species, or are hybrids. If you're the kind of gardener who needs correct labels, this book will help you immensely.

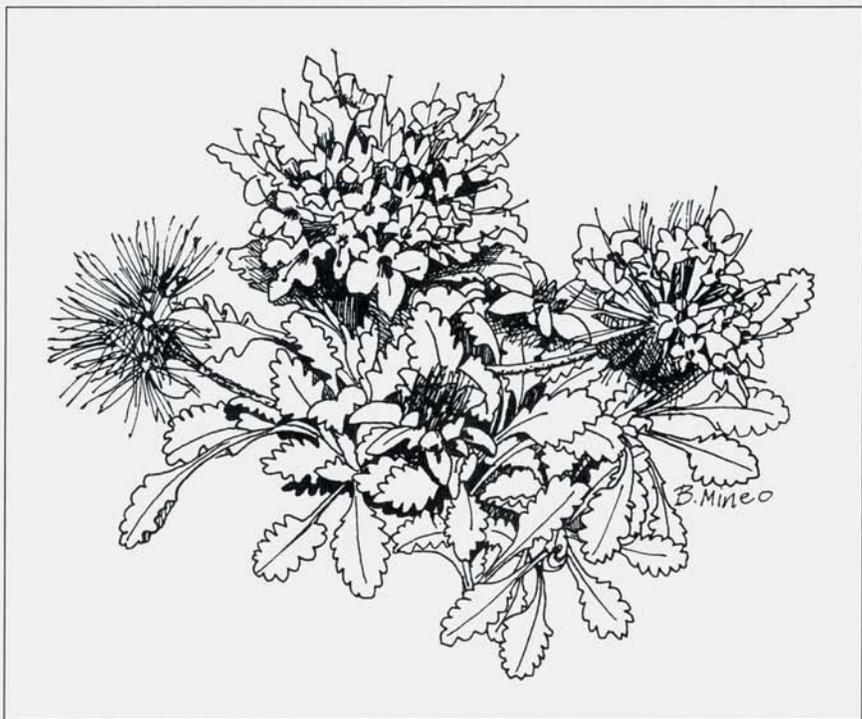
The book gives very good value for the money, in part because Bennett doesn't confine it to pulmonarias, despite the title. The major part of this book is in fact devoted to other genera in the borage family. After covering pulmonarias in more than sufficient detail in the first chapter, Bennett proceeds to "other genera," and a very wide range of them, too. Many of these will be of particular interest to the rock gardener seeking information on challenging plants such as *Anchusa caespitosa*, *Eritrichium*, or *Arnebia*. In this section, I was pleased to see the underutilized but excellent groundcover *Trachystemon orientalis*. Bennett also covers in depth the *Symphytum* cultivars and hybrids, a genus that, like *Pulmonaria*, needs clarification in the nursery trade.

Rock gardeners will be particularly interested in the section on "genera rare in cultivation." Bennett provides detailed growing and propagating information for such obscure plants as *Trigonotis* and the mouthwateringly lovely *Chionocharis bookeri*—the Himalayan version of *Eritrichium nanum*, a woolly cushion that would require alpine house conditions. This chapter will also entice growers who pore over seed lists full of obscure names such as *Alkanna*, *Arnebia*, or

Cryptantha. There is plenty of information on where they will grow best. If a plant is rare and difficult, the author says so, but she gives alternative ways to propagate these plants. Hardiness zones are also mentioned, which make this book relevant for a wide range of gardeners. Bennett also gives interesting ethnographic and zoological details about the plants.

I found this book invaluable as a reference book. However, one could easily read it from cover to cover, as the author presents the material in a comprehensive but very readable style. Her notes on cultivation and propagation are especially valuable if one wishes to succeed with some of the more challenging genera in this large group of plants. Not only is each species described in botanical detail, but its distribution in the wild (always a help to the grower) is also given, as well as associated species that would grow as its companions in the wild. What an excellent bit of information this is! The organization of the index is also good.

This book will appeal to a wide assortment of gardeners, from the garden-center junkie looking for all the named cultivars of *Brunnera* to the alpine-house purist attempting the rare, unusual, and challenging members of this family. It should become the definitive reference book for this underutilized group of plants.



Pterocepalus parnassii. Drawing by Baldassare Mineo.

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NARGS COMING EVENTS

Eastern Winter Study Weekend: "Special Gardens for Special Plants," January 30–February 1, 2004, at Raddison Hotel, Valley Forge, Pennsylvania. Host: Delaware Valley Chapter. Contact: Jim McClements, 50 South Prestwick Court, Dover, DE 19904-2334; tel. (302) 734-2836; <JimMcClem@aol.com>.

Western Winter Study Weekend: "Braving the Elements," March 5–7, 2004, at Valley River Inn, Eugene, Oregon. Host: Emerald Chapter. Contact: Holly Helton, 110 E. 31st Ave., Eugene, OR 97405; tel. (541) 345-9103; <hhelton629@aol.com>.

Annual Meeting: May 5–8, 2004, at Sheraton Imperial Hotel & Convention Center, Research Triangle Park (Raleigh-Durham), North Carolina. Host: Piedmont Chapter. Contact: Karen and Dave Duch, 1422 Lake Pine Dr., Cary, NC 27511; tel. (919) 467-0653; <dduch@bellsouth.net>.

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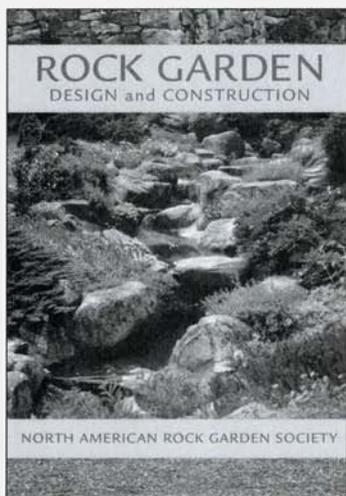
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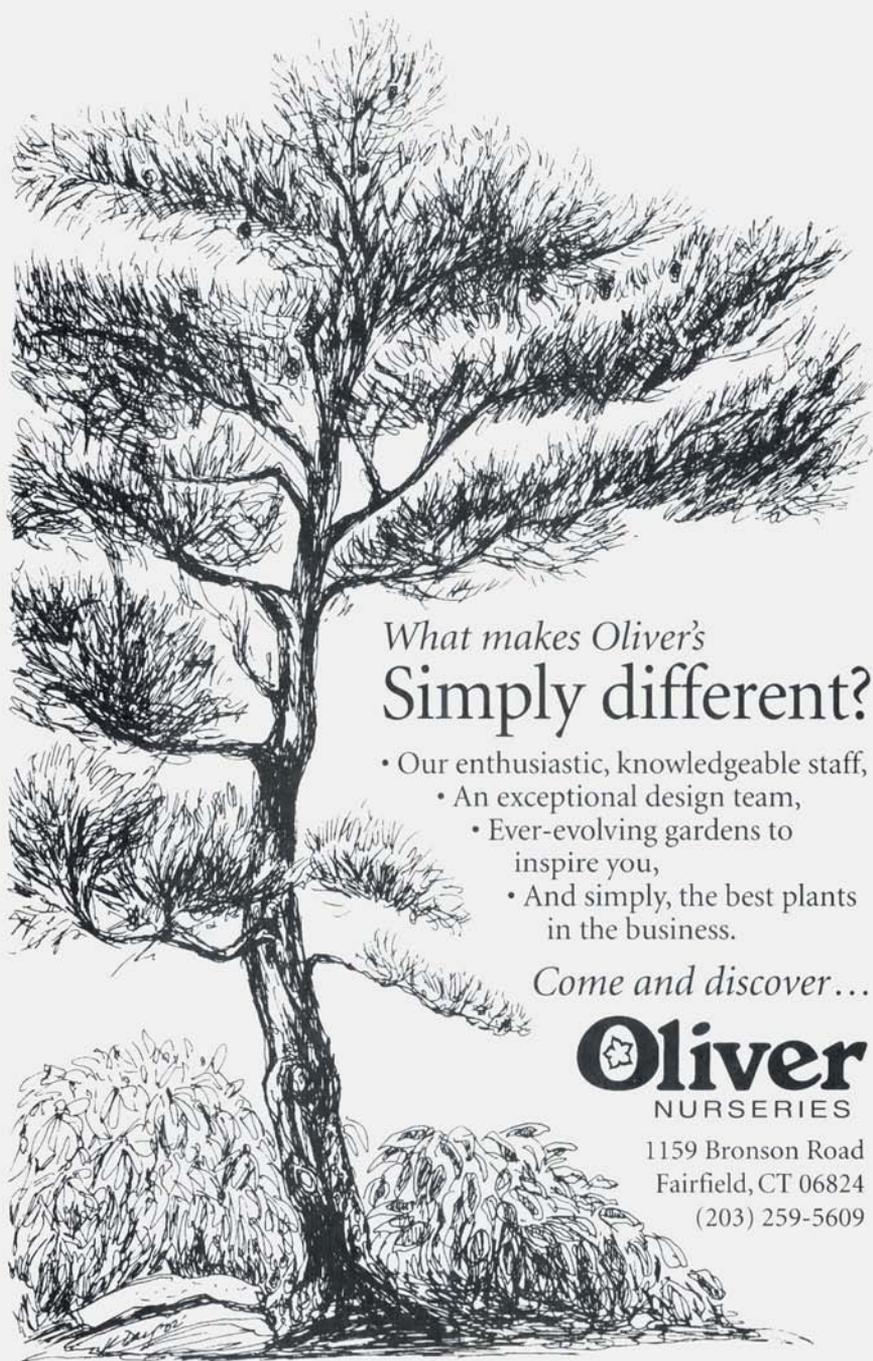
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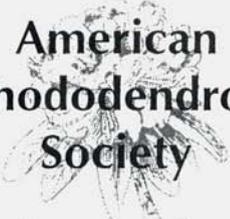
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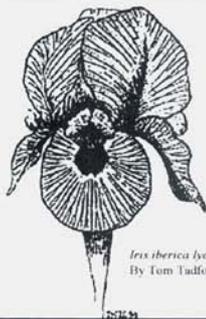
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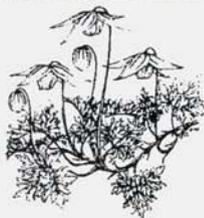
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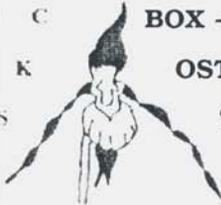
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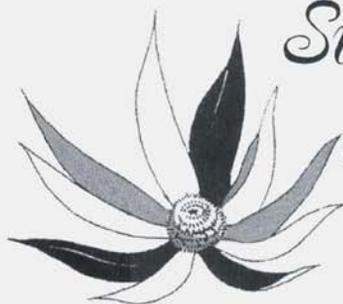
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