

ROCK GARDEN *Quarterly*



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COVER: *Asarum marmoratum* and Oregon salamander, painting by Tanya Harvey,
Lowell, Oregon

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ROCK GARDEN

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BULLETIN OF THE NORTH AMERICAN ROCK GARDEN SOCIETY

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The North American Rock Garden Society is pleased to announce its new Gift Membership Initiative. Delight your gardening friends or relatives—perhaps those who are new to rock and alpine plants—with a year's membership in NARGS. This is a perfect holiday or birthday present, and a gracious remembrance to garden-loving hosts. It's also a good way for local chapters to honor helpful members who may not yet belong to the national society.

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Maquis to Mountain: Corsican Plants for the Rock Garden

Loren Russell

As David Hale noted in "Starting Out in Europe" (*Rock Garden Quarterly* 59:281), North Americans can easily undertake unescorted botanical holidays in Europe. Nonetheless, the group tours offered by the Alpine Garden Society (AGS) and by commercial "ecotour" firms offer many advantages: along with professional leadership and prearranged lodging and transportation, the sharing of botanical knowledge and growing experience among participants is wonderfully enriching. I recommend these tours highly, especially for a lone traveler on his or her first visit to a region. I joined an AGS tour of Corsica from April 22 through May 5, 2001, led by David Tattersfield. I want to thank David, and also John and Hilary Birks, who compiled the list of around 700 species of plants seen on the tour.

Corsica, like the other large islands of the western Mediterranean—the Balearics (Mallorca, Minorca, and Ibiza), Sardinia, and Sicily—has drawn little recent comment in the rock garden literature. These islands do not offer the glorious diversity of bulbs, orchids, cushion plants, and dwarf shrubs that draws rock gardeners to the eastern Mediterranean. People also tend to assume that most of their plants are not very winter-hardy. Why, then, did I go to Corsica? The short answer is that AGS Expeditions had space for me on short notice. But the natural vegetation of Corsica is hardly impoverished, boasting 2,100 native species of vascular plants, possibly the highest total for any Mediterranean island. The level of endemism is modest: perhaps 8 to 10 percent of the species are restricted to Corsica or are regional endemics that also occur in Sardinia, the Balearics, and/or locally on the Italian mainland.

Corsican plant localities and many Corsican plants are described in *AGS Bulletin* (now *The Alpine Garden*) articles by Will Ingwersen, Jim Archibald, and Lionel Bacon, among others. I am writing from a North American perspective, however, and my primary aim is to discuss Corsican plants that deserve more attention in North American gardens, particularly in the quasi-Mediterranean climate of the maritime Pacific Northwest, where I garden. Many, however, would be successful in other Zone 7 or Zone 8 areas with hot summers. Except for a dry and nearly frost-free coastal strip, the climate and soils of Corsica (especially in the uplands

above approximately 500 meters/1600 feet), are strikingly similar to those of the inland valleys of western Oregon: hot, rainless summers and cool, wet winters, and generally acid, heavy soils. Corsica has high rainfall for its region, averaging around 70–100 cm (28–40 inches), varying from 50 cm (20 inches) on the southern coast to as much as 200 cm (80 inches) in the mountains.

The natural vegetation of the areas we visited was surprisingly unspoiled by grazing and agricultural development (aside from the eastern coastal plain), and it was lush in this atypically cool, wet spring. Rather than a stereotypical Mediterranean rocky desert of limestone swarming with goats and sheep, we saw dense vegetation on mostly acid soils: pine, beech, and cork oak forests, and the characteristically dense maquis (shrub community or chaparral). Despite abundant domestic livestock, we saw little evidence of overgrazing. This moderation is almost certainly a recent development: Corsicans have traditionally subsisted on meat and dairy products, but since World War II, many mountain villages have become almost deserted except in the summer tourist season. Striking to many tour members, though familiar to my western American eyes, was the close proximity of frost-free coastal vegetation to alpine meadows, and of mesic (moderately moist) forest to the dry maquis. Many plant species grew over a wide elevational range, often in apparently dissimilar habitats. This complex pattern of maquis and forest is largely the product of frequent wildfires.

Many of the plants we saw are familiar in cultivation; the coastal maquis, for instance, is full of culinary and medicinal herbs, including rosemary, lavender, santolina, and herb-baron. Inland, much of the forest was carpeted with hellebores, cyclamens, and anemones.

Our group traveled from bases in two inland towns, Corte at the eastern foot of the northern mountains, and Quenza in the Alta Rocca region in the south. (The localities mentioned may be found on a map like the Michelin 1:100,000 series; note that many places in Corsica have alternative French and Corsican names.) We visited coastal maquis and shore vegetation communities in both north and south. Notable coastal localities in the north included the eastern side of Cap Corse and the Désert des Agriates. Situated just west of the base of Cap Corse, the latter is a wilderness of low coastal maquis with its many granite outcrops shattered by repeated fires. A dirt road through the Désert ends at a lovely sandy lagoon, the Plage de Saleccia.

From Corte, we explored a series of forested gorges cut into the eastern side of the northern massif: the Asco, the Scala di la Santa Regina, and the Restonica. We walked well into the alpine zone at the head of the Restonica valley, reaching 1900 meters (6200 feet). Finally, we hiked the Spelunka gorge (the origin of the word “spelunking” for cave exploration) near the western coast, via the GR20 hiking trail from Evisa (photo, p. 257).

The southern uplands of Corsica are moister than in the north, and the mountains lower though still rugged. We saw high, moist beech forest at the Col de Vizzavona and open pine forest among wild rock formations at Col de Bavella, a scenic area celebrated in Edward Lear’s watercolors. In the Forêt d’Ospedale, we followed a trail known as the Mare a Mare Sud (“sea to sea south”),

and we viewed the Cascade de Piscia di Gallo. Perhaps the most rewarding locality we found in this area was where a foot-trail between the villages of Quenza and Levie crossed the Rizzanese River. On a gravel bar there and in the adjoining forest edge, we found many interesting plants.

Two coastal localities in the south were especially productive. The Plage de Palombaggia, east of Porto-Vecchio, features garrigue (scattered *Cistus* with grassy openings), marshy swales, and sandy-beach flora. Finally, near the Sémaphore de Pertusato on the peninsula south of Bonifacio, we found a trail down a gully to old fortifications near the base of imposing limestone sea cliffs (photo, p. 257).

Corsican Plants for American Gardens

Most of the plants mentioned below are in cultivation, but few of them are reliably available from commercial sources in North America. Many appear in the NARGS Seedlist every year, though.

Anemone apennina (photo, p. 259) is widespread in the central Mediterranean region. This attractive relative of *A. blanda* is most easily distinguished from that species by the pubescence on the lower surface of its leaves and, on average, fewer perianth segments ("petals," actually sepals in anemones). *A. apennina* was locally abundant in Corsican pine (*P. nigra* subsp. *laricio*) forest in the southern uplands near Bavella, usually growing with Corsican hellebore and bracken. This excellent garden plant prefers cooler, moister conditions than *A. blanda*. Another very attractive tuberous anemone, *A. hortensis*, was seen just once; an early-flowering species and reportedly common near the coast, it is surprisingly uncommon in American gardens. *A. apennina* is available from specialist bulb suppliers, but its seed has brief viability, whereas seed of *A. hortensis* remains viable longer.

Arenaria balearica, abundant on rock walls and shaded, moist soil in the southern uplands (Vizzavona, Bavella, Quenza), is one of the many plants endemic to the western Mediterranean islands that have a "filmlike" growth habit. (Others, aside from those discussed below, are the Corsican mint, *Mentha requienii*, and baby's tears, *Soleirolia soleirolii*.) We saw great variation in flower size, as is also true in cultivated forms. Despite its reputation as a weed in the alpine house and rock garden, *A. balearica* has been well-behaved for me, making a very attractive trough plant.

Astragalus genartenteus (syn. *A. sirinicus* subsp. *genartenteus*; photo, p. 260), a Corsican endemic, was one of the smallest and most attractive of several viciously armed cushion shrubs that grew in ridge-top openings in the southern uplands (Forêt d'Ospedale, Bavella). Among its associates were *Anthyllis hermanniae*, *Genista corsica*, *G. salzmanni*, *Berberis aetnensis*, and *Thymus herba-barona*. In Corsica, this so-called hedgehog association eventually reverts to forest in the absence of grazing.

Borago pygmaea (syn. *B. laxiflora*) is endemic to Corsica and Sardinia. This small borage, a biennial or short-lived perennial, has pale blue, nodding, cam-

panulate flowers on stems to 20 cm (8 inches). Often available in seedlists, it does well in the open garden, but the plants I've grown have been disappointing.

Brimeura fastigiata is a little "hyacinth" endemic to Corsica and Sardinia. It was common at mid elevations both north and south, usually in moist, shaded rock crevices. Tiny and distinctive, its pale pink flowers facing upward in tight clusters, this should be a nice bulb for cool crevices, troughs, or pots.

Cerinth tenuiflora (syn. *C. glabra* subsp. *tenuiflora*), at 25–30 cm (10–12 inches) tall, is a rock plant, though not one for the grower of tiny cushions. It is unusual and attractive with its spotted leaves and copper-colored borage flowers, and utterly unlike the frequently grown annual *Cerinth major*. We saw a good-sized colony of this rarely recorded endemic at the Rizzanese gravel bar.

Crocus corsicus and *Crocus minimus* are two closely related endemics (*C. minimus* to Corsica and Sardinia; *C. corsicus* to Corsica only), both widespread on Corsica. We saw *C. minimus* in bloom at one site in the southern uplands (Cascade de Piscia); *C. corsicus* flowered in sheets at the higher elevations (Restonica, Bavella) and was still in bloom near sea level in a cool, shaded gorge (Spelunca, April 24). Both species are readily grown in the open garden, especially in dry-summer regions; they are among the last species of crocus to bloom in the spring. *C. corsicus* is the larger and showier of the two. Both are available from commercial bulb suppliers.

Cyclamen repandum, a spring-blooming species, was abundant almost everywhere we went over a wide elevational range; usually *C. hederifolium* was also present in large numbers. We found *C. repandum* growing in forests of pine and of beech, in maquis, and even in the midst of a garbage dump. Though hardly unknown, this cyclamen deserves to be grown in more American gardens; in the West, it is winter-hardy to about 15° F (–10° C), or perhaps colder if well mulched with conifer needles.

Cymbalaria hepaticifolia and *C. aequitriloba* are two more western Mediterranean "film" plants, both occasionally available in commerce. *C. aequitriloba*, perhaps too similar to *C. muralis* in appearance and vigor to be desirable, grew with *Arenaria balearica* on moist, shaded rocks near a waterfall (Cascade de Piscia). *C. hepaticifolia* (photo, p. 258), larger, more distinctive, and (I think) more controllable, was among the many interesting plants on the Rizzanese gravel bar.

Erodium corsicum, a Corsica-Sardinia endemic that we saw only at Bonifacio on limestone, is also abundant on acid rocks on the west coast of Corsica. It is closely related to the Balearic endemic *E. reichardii* (syn. *E. chamaedrys*) but much less common in cultivation. *E. corsicum* is distinguished from *E. reichardii* by its gray-tomentose leaves and more robust, domed cushions. Considered an alpine house subject in Britain, it does well in a garden in Victoria, British Columbia, and merits wider use in troughs and crevice gardens in the Pacific Northwest.

Gagea bohémica subsp. *corsica* (photo, p. XXX) made splashes of yellow in alpine and subalpine meadows (Restonica, Bavella), coming into bloom just before the crocuses. This species was the most abundant of the three gageas we encountered. Taxonomically difficult and much of a muchness in appearance, gageas (closely related to tulips) are generally considered specialists' bulbs, but

meadow species like this one are easily grown from seed and worth trial in the open garden.

Helichrysum frigidum, like *Morisia* (see below), is an ancient, taxonomically isolated endemic of Corsica and Sardinia. The little gray tufts, bedraggled from the winter, were abundant in crevices in granite cliffs at Lac de Melo (Restonica). An alpine-house subject in Britain (and not worth the effort, according to early alpine-garden writer Reginald Farrer), it is successfully grown in the open on Vancouver Island. With protection from winter rain, it is considerably more hardy, to well below 0° F. This little strawflower is a true alpine and an excellent trough plant.

We encountered a colony of *Helicodicerus muscivorus* (syn. *Dracunculus muscivorus*; photo, p. 262) near Corte (Scala di la Santa Regina), in south-facing roadside rocks and abandoned garden terraces, at about 650 m (2100 feet) elevation. Few plants have elicited such purple-prose scorn as the “dead horse” arum, an endemic of the western Mediterranean islands. E. A. Bowles wrote that it was “the most fiendish plant I know, the sort of thing Beelzebub might pluck for his mother-in-law,” while Deni Bown wrote that the inflorescence was obscene, “with a full frontal view that probably is among the most shocking in the plant kingdom.” To me, *H. muscivorus*—with its low stature, intricately branched foliage and huge purplish spathes (the shape suggesting the Corsican name *orechia di porcu* ‘pig’s ear’)—is an attractive, fascinating plant. Is it growable? Conventionally, *H. muscivorus* is rated USDA Zone 9, but its occurrence in this mountain gorge, untouched by late frosts that had severely damaged the grape crop, suggests that it is hardier. It might do well in a sheltered, sunny crevice in the milder parts of the Pacific Northwest and should enjoy California, though California might not enjoy its notorious fragrance.

Helleborus lividus subsp. *corsicus* (syn. *H. argutifolius*; photo, p. 259), the Corsican hellebore, grows all over the island in a wide range of elevations and habitats, from sea-level maquis to subalpine parkland. We saw huge plants at treeline in the Restonica valley. Though well-known, it seems underappreciated and underutilized in North America. (The hybrid of the Corsican and Balearic hellebores, *H. × sternii*, is probably more popular in gardens, but most seed strains under that name are hardly distinguishable from the Corsican parent.) One of the most attractive plants that I can grow in dry, root-infested places under trees, it tolerates sun and drought better than any other hellebore. A mature plant in full sun presents the appearance of a compact medium-sized shrub, although the leafy stems are renewed annually.

Leucanthemopsis alpina subsp. *tomentosa* (syn. *Chrysanthemum alpinum tomentosum*), though not seen on our trip, must be mentioned. This distinctive endemic form of the familiar alpine daisy is much tinier than forms from the Alps, with full-sized flowers over compact rosettes of tiny gray-tomentose leaves. It occurs above 2000 m (6600 feet) in the Monte Cintu and Monte Rotundu massifs, along with other interesting endemic alpinines such as *Phyteuma serratum*, *Aquilegia litardieri*, and *A. bernardii*. All of these species occasionally appear in seedlists.

Leucojum longifolium and *L. roseum* are two little "snowflakes," both endemic—*L. longifolium* to Corsica only, and the fall-blooming *L. roseum* to Corsica and Sardinia. Both are supposed to be fairly common at low elevations, but on our spring visit we saw only *L. longifolium*, in bloom in rocky crevices in two gorges (Spelunca, Asco). Though neither species is frost-hardy, they can be grown in containers and in sheltered sites in mild gardens.

Lotus cytisoides (photo, p. 257) is not endemic to Corsica, not alpine, and not hardy. Common on sandy Mediterranean beaches, the low silvery pancakes and sessile yellow flowers make this shrubby little vetch tempting as a plant for very mild gardens, or for containers that can be protected in winter. Often growing near it is *Asteriscus maritimus* (photo, p. 261), a shrubby composite of similar habit that constantly covers itself with yellow flowers; the latter is frequently available as a summer container plant.

Morisia monanthos, well-known to rock gardeners, is a Corsican and Sardinian endemic that we saw only in moist limestone sand at Bonifacio. It was quite rare even in this limited habitat. *M. monanthos* is not restricted to limestone, since it also occurs on the slopes of Monte Stellu (Cap Corse), but it requires open, sandy soil with a constant moisture supply not far from the surface. This is true in cultivation as well: I have lost it twice when troughs became too dry. It can tolerate just a few degrees below freezing. Rick Lupp of Mt. Tahoma Nursery near Seattle grows it in open sand beds and covers each plant with a large poplar leaf over the winter; with this protection, he judges it hardy to 15°F (−10°C).

North Americans are typically astonished to see European **orchids** for the first time, blooming in numbers along roadsides and in fields and abandoned vineyards, and often with several species growing side by side in these mesic to dry, often disturbed sites. The orchids in the genera ***Orchis*** and ***Serapias*** that we saw in Corsica were generally widespread species; given the huge literature available on Mediterranean orchids, it is unnecessary to describe them separately. Among the showiest and most common in a wide range of habitats were *Orchis papilionacea*, *O. morio*, and several *Serapias* species. In moister upland areas, *Orchis provincialis* was also abundant. Other showy species included *Orchis purpurea* (a nice colony grew with other orchids in abandoned garden terraces near our hotel), *Orchis laxiflora* in ditches and coastal marsh, *Anacamptis pyramidalis*, and *Ophrys lutea* subsp. *minor*. The last two species mentioned were seen only on limestone near Bonifacio, but the others were usually growing on neutral to acid soils derived from granite and schist. This was a revelation, since I had previously assumed that most if not all of the Mediterranean orchids were limestone specialists. From what I saw in Corsica, I believe that some or all of the species mentioned could be grown in the open garden on the American Pacific coast. European growers propagate these from seed, so we can hope soon to have a North American source, especially for colonizing forms like some *Serapias* and intergeneric hybrids involving *Serapias*.

Paeonia mascula subsp. *russii* (or *russoi*) is locally abundant on Corsica and Sardinia, and rare on the Italian mainland. We saw this attractive peony at Forêt d'Ospedale, growing with *Narcissus tazetta* in a vernal moist rocky area. Ex-

change seed of garden origin is often misidentified, so look for wild-collected seed.

Pancratium illyricum (photo, p. 259) is a magnificent amaryllid that could be likened to a large, white-flowered, fragrant daffodil. Found primarily in Corsica and Sardinia, it was common over a wide elevation range from sea level to 1500 m (5,000 feet) in the Restonica valley, and in habitats from dry coastal scrub to openings in moist montane forest. It is fairly hardy (probably beyond the Zone 8 usually quoted for it), since blooming plants at some of the higher sites were untouched by late frosts that had badly damaged *Cyclamen repandum*. There have been many attempts to cultivate *P. illyricum*—one early writer described carrying a huge load of bulbs back to his Corsican hotel—but in Britain, at least, it and the closely related *P. maritimum* are notorious for slow growth and reluctance to bloom. My sense is that it is more likely to succeed as a garden plant where summers are hotter and drier, as in Oregon, despite the fact that *P. maritimum* has failed to flower near Portland over many years. I'll have an opportunity to try it in my garden, thanks to NARGS member Susanne Coutant, who sent me seeds from her Paris garden. She tells me that her plant, collected in Corsica, has flowered reliably for 20 years. "It is a very easy plant which needs sun, very well drained soil, preferably on a slope as one sees it in Corsica. Over the years the bulb has gone deep and is not affected by frost. It flowers abundantly and produces abundant seed." Seed that I sowed in October, November, and January has germinated and seedlings remain in vigorous growth in late July.

Polygala nicaeensis subsp. *corsica* (photo, p. 260) is a widespread, extremely variable species that is hardly known in cultivation. The Corsican form was one of the showiest small perennials in the coastal maquis (Cap Corse) and was also seen at higher elevations (Bavella). Many erect stems grow from a shrubby base, each stem with bright pink flowers packed along the outer side. This form is certainly garden-worthy and ought to be tried in hot, dry gardens where other maquis plants (e.g., cistus, lavenders) are grown. I have not been able to find a source (seed or otherwise) to try it.

We arrived too late to see any **romuleas** in bloom, but seed capsules covered the ground in sandy areas, especially near the coast. There are about six species of these crocus-like cormous plants on Corsica, and most are endemic, including *Romulea requienii*, an attractive, large-flowered species frequently grown by bulb specialists. Most tend to be hardy to about 20°F (−7°C).

Saponaria alsinoides occurred at the Rizzanese River bar near Levie, growing among granite cobbles with *Jasione montana*. This soapwort is probably a variant of the widespread *S. ocymoides*. Regardless of their taxonomic status, the Corsican plants—compact, with few-flowered cymes and grayish foliage—are distinct from the usual cultivated forms of *S. ocymoides* and merit a try.

Saxifraga corsica and *Saxifraga pedemontana* subsp. *cervicornis* (photo, p. 260), two endemic saxifrages that are not closely related, often grew together on rocky ledges, road cuts, and walls. The subspecies of *S. pedemontana*, including *cervicornis*, are sometimes given species status; like the mainland forms of *S. pedemontana*, this subspecies grows well in Pacific Northwest gardens, where it is one

of the showiest and most heat- and sun-resistant of the mossy saxifrages. *S. corsica*, closely related to the meadow saxifrage *S. granulata*, has a more compact inflorescence than the latter and is a true rock plant. *S. corsica* is considered an alpine house plant in Britain, but judging from the performance of other gemmiferous (bearing summer-dormant buds in the leaf axils) saxifrages of the western Mediterranean, it is a good prospect for troughs and crevice gardens in my area.

Sedum caeruleum (photo, p. 258), ranging from Corsica and Sardinia to North Africa, is a little annual stonecrop with starry pale blue flowers, a color almost unique in the genus. Colonies of the new seedlings form brilliant crimson patches on top of granite outcrops near the Corsican coast (Désert des Agriates). Readily available from seed exchanges, this sedum is a curiosity that reminds me of the “sea monkeys” (brine shrimp) that children sometimes raise; it’s an ephemeral organism that’s weird and easy and quick to grow.

Stachys corsica (photo, p. 261), another endemic that could be called a “film,” is an eccentric in a genus of tall, coarse herbs. The flat, creeping mats covered with 2 cm-long white labiate flowers make this attractive little mint a candidate for moist spots in the rock garden. We saw it on moist, rocky soil in the southern uplands (Rizzanese gravel bar, Bavella).

Loren Russell lives in Corvallis in Oregon’s Willamette Valley. An avid hiker and photographer, he annually contributes magnificent donations to several seed exchanges and lectures frequently on alpine plants to NARGS chapters, including a nationally sponsored eastern tour in 2000. He organized the field trips for the NARGS annual meeting in Eugene, Oregon, several years ago and helped plant Eugene’s public Sebring Rock Garden. He has contributed chapters to the NARGS-sponsored books *Bulbs of North America* and the forthcoming *Rock Garden Design and Construction*.

Further Reading

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Daphnes Old and New

John Bieber

The larger species and hybrids of the genus *Daphne* are grown by most rock gardeners, either as major shrubs on the rock garden itself or in well-drained borders elsewhere in the garden. The majority of the plants discussed in this article adapt well to cultivation over much of North America, tolerating hard frost and summer heat, dry or humid summers, and a wide range of rainfall regimes. Many of the hybrids display typical "hybrid vigor" and are more amenable garden subjects than their parents.

These remarks reflect my experience growing daphnes in Bethpage, New York, on Long Island, in USDA Zone 7 (minimum winter temperature 0°F/-18°C). Some of the plants mentioned are available from many commercial nurseries, but you may have to hunt for others. If you want to pursue daphne lore as well as the plants themselves, I encourage you to join the Daphne Society, which now has members in twelve countries (see address at the end of this article).

Daphne × *transatlantica* 'Jim's Pride' (photo, p. 264)

For years, many gardeners have grown a plant under the name *Daphne caucasica*, but about eight years ago, Bob Bartolomei of the New York Botanical Garden informed me that this plant is in fact a hybrid. The true *D. caucasica* is deciduous, blooming once in spring and occasionally reblooming in late summer. The plant we have been mistakenly calling *D. caucasica* produces its white flowers almost continuously from spring until hard frost (this past year, it was still flowering in January). In many gardens, it is evergreen; on Long Island, it is usually semi-deciduous and may lose all its leaves in severe winters.

What were this hybrid's parents? A clue came in 1995, when Robin White of Blackthorn Nursery in Hampshire, England, used pollen from *Daphne collina* to fertilize the true *D. caucasica*. The first seedling that flowered proved almost identical with the American hybrid Robin had acquired from Bartolomei in 1994. In the December 2000 issue of *The New Plantsman*, Robin and Christopher Brick-

ell formalized the name of our mystery plant as *D. × transatlantica*, reflecting its origin in North America.

The majority of these plants growing in North American gardens today probably originated with the late Jim Cross of Environmentals Nursery in Cutchogue, New York, who grew them from cuttings he received from the Arnold Arboretum in 1977. To honor him, Bambi Sadeli of Environmentals Nursery suggested the cultivar name 'Jim's Pride'. Robin and Chris agreed, and we now have a full name for the widely grown clone.

Daphne × transatlantica 'Beulah Cross'

Several years ago, Jim Cross discovered a variegated sport on a plant of *Daphne × transatlantica* 'Jim's Pride'. Propagated, it became a vigorous, well-shaped, fast-growing, sturdy plant with leaves slightly broader than those of 'Jim's Pride'. Cross distributed it as *Daphne caucasica variegata*. Donna Messina, who manages Environmentals with her mother, Conni Cross, gave it its official cultivar name in honor of Jim's mother, Beulah Cross. This beautiful daphne would make a fine addition to any garden and can be kept in bounds by judicious pruning.

Daphne × burkwoodii

In 1931, Albert and Arthur Burkwood crossed *D. caucasica* with *D. cneorum*, the pollen parent being the former. Two seedlings survived: *D. × burkwoodii* 'Somerset' and *D. × burkwoodii* 'Albert'. The upright 'Somerset' is more common in gardens than the spreading 'Albert', the latter often being grown merely as *D. × burkwoodii* without a cultivar name. Both forms have white flowers, occasionally flushed pink.

Controversy surrounds the origin of the vigorous variegated form *D. × burkwoodii* 'Carol Mackie', but I believe it was a sport of 'Albert' because it has a similar spreading growth habit. It was discovered in New Jersey by Carol Mackie and was given to the late Don and Hazel Smith, who successfully propagated and distributed it. It is perhaps the most popular daphne in American gardens today. Specimens grow quite fast: mine was at least 6 feet (2 m) across and about 4 feet (1.3 m) tall before a heavy, wet snow damaged it last spring. (The plant's broadly spreading habit makes it vulnerable to splitting of the trunk under a heavy snow load.) I cut it right down to the ground, expecting that it would resprout from the roots, which it eventually did; however, it reverted to the non-variegated form and is becoming a well-shaped specimen of typical *D. × burkwoodii*.

D. × burkwoodii 'G. K. Argles' is a sport of 'Somerset' with an extremely upright habit; it needs shearing to make it an attractive shrub. I believe this plant will gain popularity as it becomes more widely distributed because it occupies less space than 'Carol Mackie' and adapts well to a small garden. It appears identical to 'Carol Mackie' in all respects except growth habit.

D. × burkwoodii 'Silver Edge', believed to be a sport of 'Somerset', has a similar upright habit. Having seen both this and 'G. K. Argles' as mature specimens, I find it hard to distinguish between them. Both are exceptionally fine daphnes, and quite hardy.

D. × burkwoodii 'Briggs Moonlight', another sport of 'Somerset', displays variegation that is the reverse of that on 'Carol Mackie': instead of having yellow margins, the leaves are yellow in the center with narrow green margins. Not many gardeners have succeeded in growing this plant, which seems to be very susceptible to *Phytophthora*, a soil-borne pathogen causing root rot. I have seen it growing well in only two gardens: that of Marion Jarvie in Ontario, and that of Dick Redfield in Scotland, Connecticut. The plant that has been in my garden for about seven years survives but does not flourish in Long Island's fairly mild winters and hot, muggy summers. It is, however, a very beautiful foliage plant, and I hope we will soon find the key to success with it.

D. × burkwoodii 'Gold Dust' is a sport of 'Silver Edge' selected by Dick Punnett, propagator for Arrowhead Nurseries in Michigan. Its unusual foliage appears to be covered with fine gold dust. It has the same upright habit as 'Silver Edge' and is a fine addition to the *burkwoodii* clan.

There are also two crosses of *D. × burkwoodii* with other daphnes that have proved quite successful. *D. × mantensiana* (photo, p. 265) is a cross between *D. retusa* (the pollen parent) and *D. × burkwoodii* 'Somerset'. This plant seems never to stop flowering and is valuable in any garden. *D. × burkwoodii* 'Rosy Wave' is a cross between *D. × burkwoodii* and *D. collina*. I recently acquired one and look forward to seeing its flowers, which are pink, unlike those of *D. retusa* or *D. × mantensiana*, which are white with purple exterior.

A form of *D. × burkwoodii* 'Somerset' called 'Variegata' is available in England, and we hope it will soon make its way to this side of the pond. The edges of its leaves are pale cream, and it is said to grow 3–4 feet (about 1 meter) tall.

The only known result of the reverse cross, *D. cneorum* × *D. caucasica*, originated in France and is known as *D. × burkwoodii* 'Lavenirii'. It occurred spontaneously around 1920 in the nursery of Morel and Lavenir at Lyon-Vaise. In my garden, it appears similar to 'Somerset', but the buds seem to be darker pink before opening to white flowers.

Daphne genkwa

I am currently growing three forms of *Daphne genkwa*, all deciduous, and I can't easily choose a favorite. The most widely grown form has a somewhat open habit and seems to shape up best if pinched back periodically to produce a tighter, well-branched shrub. Its lavender flowers have more blue in them than those of the other two, but it is difficult to capture the true color on film. The flowers appear before the leaves, a striking display about mid-April in my garden in typical years.

About ten years ago, I purchased a plant of *D. genkwa* 'Large-flowered Form' from Siskiyou Nursery. This is also known as the 'Gossler form' after its intro-

duction by Gossler Nursery in Eugene, Oregon. According to Josef Halda, it is typical of plants that grow at lower elevations than the smaller-flowered forms, and the latter may be more cold-hardy. The 'Large Form' is more vigorous and faster-growing. Its flowers are pink with a slight purple tint, and the perianth tube is longer than that of the other forms. It has a tendency to send up shoots 2 to 3 feet (60–90 cm) tall before branching, so I have found it necessary to pinch it back to produce a well-formed shrub.

Eight years ago, Joyce Fingerut sent me cuttings of a plant she had obtained from Don Hackenberry, who had grown it from seed received from the Beijing Botanical Garden. (The seeds were collected from wild plants about to be inundated as a result of the construction of a huge dam in China.) The cuttings Joyce sent me rooted well and produced plants that differ in many characteristics from the first form I described. This form is a rapid, upright grower with light lilac flowers; in my garden, it blooms earlier than the other two forms. It is now known as *D. genkwa* 'Don Hackenberry Group'—'Group' because it involves more than one clone. Pruning is essential to keep this plant within bounds, since it easily attains 5 feet (1.6 m) otherwise. It is best to start pinching it back when it's small, shaping the plant as it grows, which will eliminate the need for heavy pruning later on.

I find that *D. genkwa* usually roots readily. I take cuttings about mid-June to mid-July, and they root in four to eight weeks. Although some other growers dispute this, I believe that these cuttings, like those of deciduous azaleas, must grow before going dormant, or they will not break the following spring. At Environmentals Nursery on Long Island, the cuttings are taken in October and placed in a heated propagating shed, which keeps the plant from going dormant, a satisfactory method if you have suitable facilities.

Daphne collina

Daphne collina (photo, p. 263) is, in my estimation, one of the finest species, but unfortunately, it is only marginally hardy in my area. It is native to southern Europe and is rated as USDA Zone 7, but it rarely comes through our winters unscathed. I have had reports of its growing in Zones 6B or 6, but probably in very favored microclimates. In one severe winter, it defoliated completely here, but to my surprise it recovered. My plant is now at least 20 years old and is about 20 inches (50 cm) across and 15 inches (37 cm) tall, but it might be larger if I did not take many cuttings each year, shaping it into a very compact bush. The foliage is dark green and pubescent, quite attractive when the sunlight strikes it at certain angles. The flowers are pink to purple and extremely fragrant, generally appearing about mid-April here.

Daphne collina is a parent of many fine hybrids, which, in my experience, tend to be hardier than it is. All its hybrids with *D. arbuscula* are recognized as *D. × susannae*. The most widely distributed of these in the United States is *D. × susannae* 'Lawrence Crocker' (photo, p. 265), discovered by its namesake when he co-

owned Siskiyou Rare Plant Nursery many years ago. (A memorial article on Lawrence Crocker appears in this issue.) It has become extremely popular because of its large pink flowers, hardiness, attractive linear foliage, and fine compact habit. I have seen it grown successfully in Michigan and Canada.

Three other *D. × susannae* cultivars were produced in Europe: 'Anton Fahndrich' (seed parent not known), 'Cheriton' (*arbuscula* × *collina*), and 'Tichborne' (*collina* × *arbuscula*). Slightly different from 'Lawrence Crocker', these plants are also very attractive. They are now being propagated in the United States and should be available in the not-too-distant future.

Another fine hybrid of *D. collina* is *D. × napolitana* (*collina* × *cneorum*). We have been growing this plant for many years, but its parentage was finally determined by White and Brickell. In my garden, *D. × napolitana* is a much hardier plant than *D. collina* itself, obviously owing to the *D. cneorum* influence. It has never shown any blemish, even in our most severe winters. It is also more vigorous than *D. collina*: my plant is now at least 3 feet (90 cm) across and 25 inches (65 cm) tall. It has a nice tight habit and the linear leaves of most *D. collina* hybrids, and its profuse flowers have a sweet, heavy fragrance. A must for the gardener, it is available from several specialty nurseries.

Two other cultivars are *D. × napolitana* 'Bramdean' (*D. collina* × *D. cneorum* var. *pygmaea*) and 'Meon' (*D. cneorum* × *D. collina*). Both are splendid plants that I look forward to growing.

The hybrids of *D. collina* with *D. petraea* are known as *D. × rollsdorfii*. One, 'Wilhelm Schacht', is *D. collina* × *D. petraea*, and another, 'Arnold Cihlarz', is the reverse cross. These are fine small shrubs with attractive dark green foliage and extremely fragrant rosy purple flowers. Collectors will want both. Although new to North America, they are occasionally listed by specialty nurseries.

Some old favorites

It is impossible to go into detail about every daphne I grow, but I'd like to touch briefly on some others that have been staples in the rock garden for many years.

Daphne retusa, which I like to call "the cooperative daphne," is easy to grow. It tolerates full sun to part shade and is not fussy about soil. It has beautiful leathery leaves and extremely fragrant white flowers opening from rosy purple buds, followed by showy red fruits. Its slow growth makes it suitable for most rock gardens. As a bonus, it is very easy to root from cuttings taken in July.

Daphne tangutica (photo, p. 263) is similar to *D. retusa* but much faster growing. The leaves are not quite so leathery, but nevertheless attractive. This species blooms on old wood and then again on the new wood, producing flowers on and off throughout the growing season and holding ample fruits all season long. It benefits from shearing.

Daphne cneorum has been the standard rock garden daphne for ages. Its available forms include *D. cneorum* 'Album', 'Eximia', 'Ruby Glow' (photo, p. 264), var. *pygmaea*, and var. *pygmaea* 'Alba', with many more due to arrive in North

America in the future. I am unhappy to report that most of them do not flourish in my garden (except for *D. c.* var. *pygmaea*), perhaps because of our hot, muggy summers and unpredictable winter weather. I have seen fine specimens growing farther north in Michigan, upstate New York, and eastern Canada. In addition to its hybrids under the rubric *D. × burkwoodii*, discussed above, *D. cneorum* has been crossed with *D. petraea* to produce hybrids called *D. × hendersonii*. These are slowly trickling into North America.

John Bieber, a longtime member of NARGS and its Long Island chapter, gardens in Long Island. To join the Daphne Society, write to him: 185 8th St., Bethpage, NY 11714, or e-mail Joann Knapp <jknapp@optonline.net>.

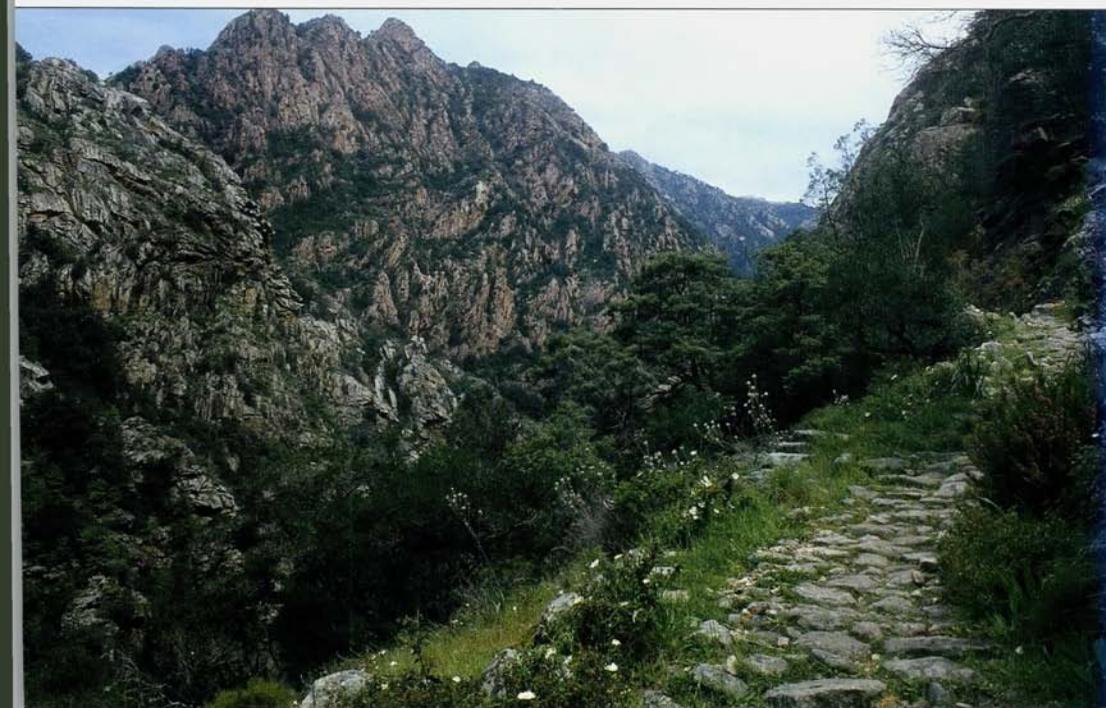
Sources

Mt. Tahoma Nursery, 28111 112th Ave. E., Graham, WA 98338; catalog \$2
Siskiyou Rare Plant Nursery, 2825 Cummings Rd., Medford, OR 97501, catalog \$3
Wrightman Alpines, 1182 Parmenter Rd., Sutton, PQ J0E 2K0, catalog \$2



The Corsican coastline at Bonifacio (p. 245) is brightened by yellow *Lotus cytisoides*.
(photos, Loren Russell)

The Spelunka Gorge (p. 244) on Corsica, popular with hikers for centuries, also attracts plant-hunters.





Cymbalaria hepaticifolia (p. 246) near the Rizzanese River, Corsica. (photos, L. Russell)

Young plants of the monocarpic *Sedum caeruleum* (p. 250) form brilliant patches on the boulders of Corsica.

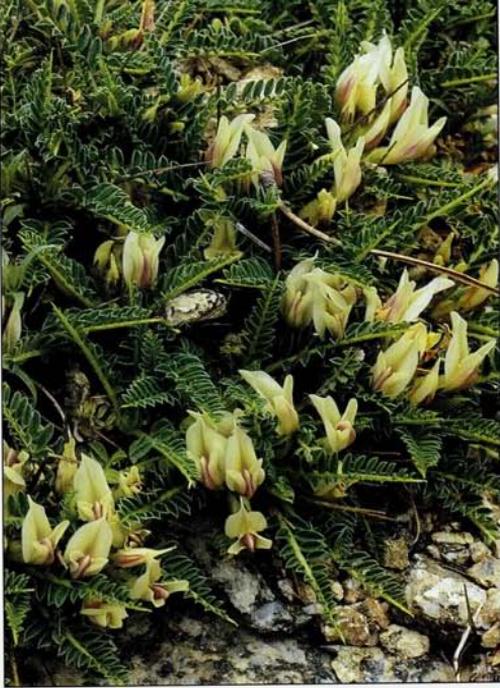




Pancratium illyricum (left; p. 249) and *Gagea bohemica* (right; p. 246) are among Corsica's beautiful bulbous plants. (photos, L. Russell)

Anemone apennina (p. 245) and *Helleborus lividus* subsp. *corsicus* (p. XXX) carpet open woodland.





Left, *Astragalus genartenteus* (p. 245); right, *Saxifraga pedemontana* subsp. *cervicornis* (p. 249).
(photos, L. Russell)

Polygala nicaeense subsp. *corsicus* (p. 249) brightens Cap Corse.





Asteriscus maritimus (p. 248) and *Convolvulus althaeoides* carpet sandy areas on the bluffs of Bonifacio, Corsica. (photos, L. Russell)

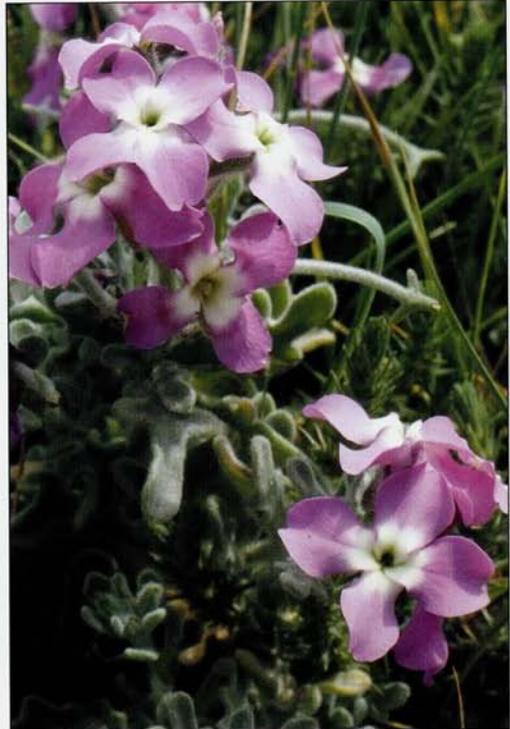
Stachys corsica (p. 250) is a good mat-forming plant for dry gardens.





Helicodictyon muscivorus (p. 247), the dreaded "dead horse arum." (photos, L. Russell)

Left, the rock fern *Asplenium ceterach* at Cap Corse (p. 244); right, the silver-leaved, fragrant *Matthiola tricuspidata* at Bonifacio (p. 245).





Daphne tangutica (above; p. 255) and *Daphne collina* (below; p. 254) are fine garden plants in their own right and also the parents of notable hybrids. (photos, John Bieber)





Daphne cneorum 'Ruby Glow' (p. 256) is a widely available horticultural selection of the popular "rock daphne." (photos, J. Bieber)

Daphne × *transatlantica* 'Jim's Pride' (p. 251) is the correct name for the plant widely grown in North America under the name *D. caucasica*, one of its parents.





Daphne × *susannae* 'Lawrence Crocker' (p. 255) commemorates its hybridizer. A memorial to the late Lawrence Crocker appears on p. 291. (photos, J. Bieber)

Daphne × *mantensiana* (p. 253) flowers almost constantly in the garden.





Acres of flowering annuals are a feature of early spring in the southern California deserts (p. 273). This array at Saddle Back Butte State Park includes pale yellow *Malacothrix californica*, deep yellow *Coreopsis bigelovii*, white *Oenothera deltoidea*, and magenta *Abronia villosa*. (photos, David Hale)

Purple *Orthocarpus* sp. and orange *Eschscholzia californica* near Lancaster, California, in April.





Donna Hale enjoys a field of *Oenothera deltoidea* in Saddle Back Butte State Park (p. 275). The seemingly barren hills in the background also contain an interesting plant community. (photos, D. Hale)

Malacothrix californica (p. 275) welcomes travelers at Boyon Rest Area in southern California.





Glaucidium palmatum (p. 277), a choice plant of temperate woodland, rises above shade-loving carpeters such as *Cyclamen hederifolium*, *Dicentra*, and *Epimedium*. (photo, Tony Reznicek)



Shortia × *intertexta* 'Leona' (p. 278) is a hybrid between American and Asian species.
(photos, T. Reznicek)

Heloniopsis orientalis (p. 279) flowering in the April woodland.





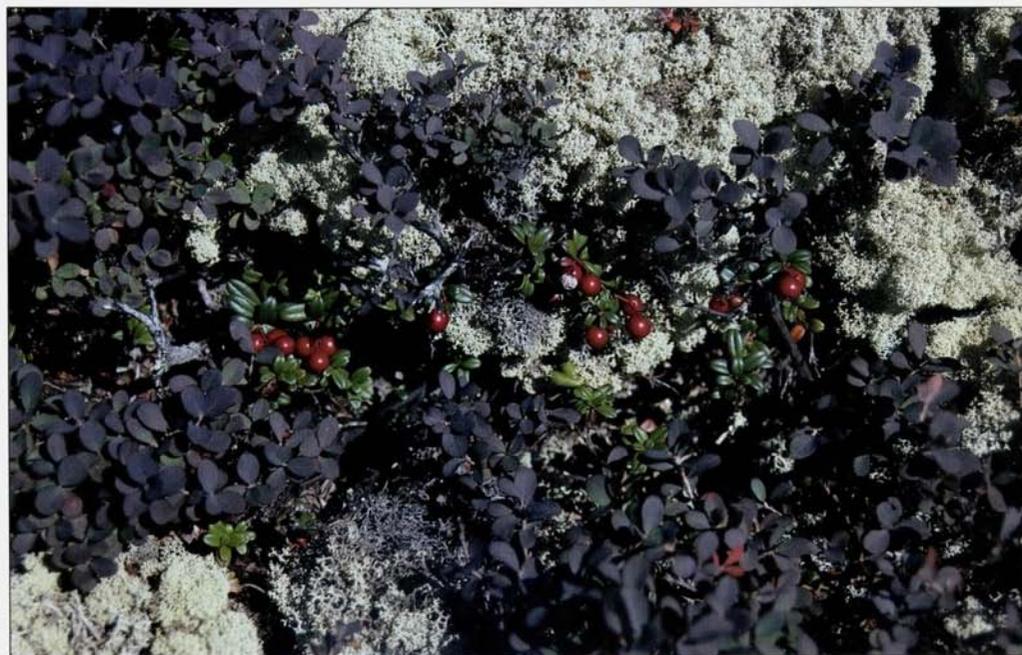
Pleiones flourish in hanging moss baskets at the Cavender garden and nursery (p. 282).
(photo, Dick Cavender)

Ev Whittemore's photograph of her crevice garden in the hills of North Carolina was awarded first place in Class 3 (rock garden scenes) in the 2002 *Rock Garden Quarterly* Photo Contest.





Full results of the 2002 Photo Contest and more prize-winners, including many digital camera images, will appear in a future issue. These two photographs, both submitted as slides, earned Honorable Mention in the large Class 1 (portrait of a plant in the wild). Above, *Viola flettii* in the Olympic Mountains, Washington, photographed by Doris Taggart in July 2002. Below, *Vaccinium vitis-idaea* var. *minus* in fruit, in the White Mountains of New Hampshire, photographed by Thomas Clark in September 1995. The dusky purple foliage is another *Vaccinium* species.





First prize in Class 2 (portrait of a plant in cultivation): *Papaver burseri*, photographed by Thomas Clark in the Mt. Holyoke College Botanical Garden.

Desert Flowers in Southern California

David Hale

Everyone has heard of the spectacular wildflower displays of the Californian deserts, but understanding them, knowing the timing of their blooming, gaining access, and identifying the plants can pose problems. Nonetheless, these are easily overcome.

There are approximately 35,000 square miles of desert in southern California, primarily the Mohave Desert and part of the Colorado Desert. The Mohave (also spelled Mojave) is bounded in the north by the southern edge of the Great Basin, the area between the Rocky Mountains and the Cascade-Sierra Nevada chain. This northern area of the desert includes Death Valley. The eastern edge is defined by California's eastern border, and the southern edge by the U.S./Mexico border. This southern part is actually an extension of the Mexican Sonoran Desert. The western border is defined by the mountains of the Sierra Nevada, and farther south by the San Bernardino and San Jacinto ranges. Elevations in the deserts range from nearly montane to below sea level (-280 feet in Death Valley). There are also higher mountains that form "islands" within the desert.

The weather is often severe: the highest temperature ever recorded within the United States—134°F, or about 56°C—occurred in Death Valley. The weather is also wildly erratic, with temperatures and rainfall varying greatly from season to season and month to month. The timing of rainfall is very important; precipitation of more than one-half inch between mid-December and mid-January is necessary to trigger the best displays of annual wildflowers. These displays, however, are vulnerable to extremes of weather. If the rain and cooler weather continue, the color and quantity of the displays increases through the weeks and months; however, a short spell of hot weather can stop the blooming. Even one day of 100°F (which can happen at almost any time early in the year) can do severe damage, and if it continues hot, it will end the large displays for the year. Nevertheless, almost every year has some good displays, even if limited in duration. And no year is the perfect year; that is, not all the flowers do their best in any one year. Thus, the Antelope Valley California Poppy Reserve, which hosts vast fields of the California poppy *Eschscholzia californica*, may produce only a modest show in a year that is spectacular for various other desert plants. A plant may do

quite differently in two seemingly similar years in response to innumerable variables that are not obvious.

Access to the deserts is quite good over a host of highways and roads through and around the region. Maps available at any good bookstore or from AAA are sufficient to guide you. If you live not too far away, driving your own car is easiest, but flying is an easy alternative, and you can use a rental car. Remember, the weather here in January and February can be wonderful. Many people fly to Palm Springs (which has its own good airport) to enjoy the winter weather. From there, it is just minutes to the early-blooming flowers. In fact, right in Palm Springs and nearby Palm Desert there may be wondrous flower shows. To my taste, this is far more pleasing than some popular other winter destinations. Access is also quick from the major Los Angeles area airports, about 100 miles (160 km) from the nearest desert sites.

I mentioned that timing is important: it's necessary to get current information on flower conditions and weather. This has become very easy in recent years. Before, you needed to know people who frequented the desert; later, information became available by phone from organizations, and now there are websites that are frequently updated. So you don't necessarily need to know the desert well to get up-to-date information on the best flower shows, locate the spots on the map, and drive there.

By using a good search engine on the Internet, it's possible to search for specific sites in the desert, certain parks, or towns. For example, <www.google.com> is one of my favorite search engines. If you type in "National Park Service" in the search window, you can click on <nationalparks.org>, which takes you to a website where you can access any of the individual parks. <www.calparks.gov> is a good site for information about the Mohave parks. <www.desertusa.com> is a comprehensive site with many links on a broad range of subjects connected with deserts. There is information on climate, plants, and blooming times. <www.desertmuseum.org> has many photos of plants and the desert and information about weather. Any center will refer you to others with more data on different locales. You can get information about Death Valley by calling (760) 786-2331. Data especially on the western and central parts of the Mohave is available at (760) 371-3732 in Ridgecrest, California. Mohave State Park at (661) 942-0662 will tell you about the desert and blooming conditions and sites.

Two of the books I recommend cost \$10-\$12 new but should be available used at <www.abebooks.com> (don't leave the "s" off "books" or you will be sorry). <www.bibliofind.com>, now a division of Amazon.com, is equally good to search for used books. If you don't have computer access, the two books are available at various visitor centers in the desert parks.

The first and most essential is *Desert Wild Flowers* by Edmund C. Jaeger, first published in 1940. It summarizes some 25 years of desert exploration, much of it on burro-back. It has been reprinted and updated in the 1990s. The most useful part of the book is the drawings, at 50% natural size, of all the described species, including virtually every desert species. Nearly all were done from material in the field. There are also a key, a helpful glossary, and a few black-and-white

photos. The text on the flowers includes both clear plant descriptions and history and lore. The description and history of *Yucca brevifolia*, the Joshua tree, is a page and a half long.

The second book is *Shrubs and Trees of the Southwest Deserts* by Janice Bowers. Though not as vital, it is an inexpensive book with many beautiful habitat illustrations in color. Plants are arranged in sections according to flower color. There are drawings of each plant and its parts.

My wife, Donna, and I have made four trips to the southern California deserts from early March to mid-June, the last to the higher mountain areas. We were lucky to be accompanied by Wayne Roderick, who has been visiting the desert regions of southern California for many years. We camped, but most of the areas we visited are accessible in a day's drive from a town with motels. There are also some accommodations in the desert parks. Again, the timing is not something that can be decided too far in advance; you have to phone or consult a website. Within a given time frame, the elevation dictates the availability of bloom, just as it would with alpine on a mountainside.

I will describe briefly some of our favorite roads and sites. We often enter from the west through Lancaster, California, southeast of Bakersfield, passing through the poppy preserve mentioned above. If this is "popping," it is worth a roll or two of film. Nearby we have seen hundreds of acres of poppies mixed with equal numbers of purple *Orthocarpus* (photo, p. 266). From here, we usually camp at Saddle Back Butte State Park. As Wayne says, the only drawback is that, although cars are few at night, you can hear them coming in the silent desert for five or ten miles. On April 27, 1998, we were forced to camp on top of fields of *Oenothera deltoides* in full bloom (photo, p. 267). The flowers are 3 inches (7.5 cm) across, white fading to pink. There wasn't an inch between the blooming plants that extended throughout the campground and far beyond.

The area around the campground was almost a monoculture of this evening primrose, but farther away, it blended with many other annuals, such as *Malacothrix californica*, a daisy with lemon-colored flowers; *Coreopsis bigelovii*, a bright yellow-flowered daisy; and *Abronia villosa*, appropriately called desert verbena, which is magenta-flowered. All of these were present in sheets (photo, p. 266).

These annuals are well adapted to the severe climate of the desert. Their seeds are primed to sprout only with the appropriate amount of moisture and only at the right time of year. Otherwise, they might germinate too close to the hot summer or the colder weather of early winter. I've collected seeds of 20 or 30 different species of these annuals and have been unable to get a single one to germinate, so we must enjoy them in their own home.

Other adaptations to the desert climate are familiar. Besides the cacti, desert shrubs especially adopt similar characteristics. Some have tiny rolled, cylindrical, or waxy leaves to limit moisture loss. Others produce leaves at all only in moister years. The ocotillo, *Fouquieria splendens*, is a shrub sprouting from the base. It grows progressively lusher with increasing moisture levels. Finally, in the best years, it has many leaves and bright red flowers. In the dry years, it is only a bunch of sticks.

On April 3, 1995, Wayne, Donna, and I entered Joshua Tree National Monument from the south out of Palm Desert near Palm Springs. The entrance is at about 500 feet elevation, gradually rising to about 2500 feet near the park office and visitor's center; farther to the north it drops back down. There is a campground near the north entrance. We entered early in the morning, and eight hours later we had traveled only about five miles because of our frequent stops to view flowers. The desert is never entirely covered with bloom, but the color occurred in great patches. There were repeats of the plants mentioned above, as well as hillsides of electric blue *Phacelia campanularia*, and sheets of *Lepidium flavum*, known as yellow pepper grass, a tiny plant with bright yellow flowers which, when stuffed in your sandwich, gives it a light, delightful peppery taste. *Mimulus bigelovii*, bright pink in flower, grows low to the ground. (These sheets of color are difficult to photograph properly because the photo always seems to show many fewer plants than the eye beholds. Sometimes standing away from the plants that you want photograph and using a lot of telephoto will bring the plants together, giving the scene more verisimilitude.) *Datura meteloides*, looking like a giant petunia, was alongside the road. Every few yards we stopped to photograph, sometimes backing up more than going forward.

Because of their adaptations, the parts of desert plants frequently have aesthetically pleasing features. The textures and hairiness of the leaves often lends an attractive appearance. The desert willow, *Chilopsis linearis*, a shrub to 15 feet, has handsome trunks whose black bark is etched with fine lines. The flowers are large pink trumpets.

The desert is a full feast of flowers, plants, and interesting geological features, with a colorful history worth investigating. So the next time you've had too much rain, snow, or cold in late winter and are yearning to see some color, this should be your destination, to see clear blue skies and feel the warm sun of southern California as it strikes a glow from the carpet of desert wildflowers.

David Hale, a retired physician, writes a regular column in the *Rock Garden Quarterly*. He and his wife, Donna, maintain two gardens in Portland and on the Oregon coast and enjoy traveling throughout the world, though not neglecting North America. David frequently lectures to NARGS groups.

Temperate Woodlands Worldwide

Tony Reznicek

The logo chosen for the NARGS 2003 Eastern Winter Study Weekend is based on *Glaucidium palmatum*, one of the most beautiful of woodland plants (photo, p. 268). *Glaucidium* exemplifies many of the features that make woodland plants attractive to gardeners: delicate beauty, graceful growth form, and sufficient fussiness that having a large patch distinguishes one as a skilled gardener. Moreover, its biogeography and evolutionary relationships highlight intriguing aspects of the occurrence and distribution of plants in the wild—knowledge that rock gardeners find fascinating and that can be useful in growing difficult plants.

Though rock gardens are traditionally sun gardens, many gardens have shade in some areas, and many plants that rock gardeners enjoy prefer or even demand shade. Some grow in shady microhabitats on cliffs, including *Ramonda*, *Haberlea*, the famous *Jankaea heldreichii*, and many small ferns. But there are also many woodland plants that rock gardeners love—plants that grow in the forest understory but are similar in size and character to many alpine. These include easy-to-manage delights such as *Tiarella*, small *Trillium* species, *Anemonella thalictroides*, woodland *Anemone* species, small kinds of *Corydalis*, and many others. Also in this category are some of the most desirable and sought-after (and despaired-about) plants: *Shortia*, *Soldanella*, *Pteridophyllum racemosum*, *Heloniopsis*, *Tanakea radicans*, and *Epigaea*, to name a few. Even some larger plants fall into this category, and *Glaucidium palmatum* is one. It can form huge clumps, and so can the two species of *Deinanthé*—but few people would rip these out of their gardens because they were a bit too big! They are fascinating plants and a challenge to gardeners in all but the most benign climates. But even beyond their beauty and their often precise needs in cultivation, many of these forest plants have a fascinating story to tell of past changes in the geography and climate of our planet.

Temperate forests of various types are widely distributed in the Northern Hemisphere, both south of the boreal zone and below the subalpine coniferous forest belts in mountainous regions. However, there are relatively few areas with a strikingly rich and diverse forest canopy and understory. Where are these places? One is in temperate eastern Asia—the fabulous mixed forests of China, Korea,

and Japan. These rich temperate forests have a mind-boggling diversity of woody plants, and they have provided an important number of our ornamental trees and shrubs. Their understory of herbaceous plants is, if anything, even richer.

In North America, we are fortunate to have the second most diverse temperate forest area in the Northern Hemisphere: the great eastern deciduous forest, centered on the southern Appalachian Mountains. People who have seen the deep, forested valleys, lush with trilliums and a host of other understory plants, and with a canopy dotted with the dinosaurian foliage of huge-leaved magnolias, can appreciate the unique flora of this landscape.

There are temperate forests elsewhere, too. Europe is largely a temperate forest area. However, except for a few special areas in the Balkans, forest diversity in Europe, in terms of both trees and understory plants, is quite limited. Some areas in western Asia—for example, around the Caspian Sea, are temperate forest, and some prominent ornamentals come from there, such as the familiar *Parrotia persica*. Again, though, diversity here is limited. In the temperate coniferous rain forests of the American Pacific Northwest, there are some glorious trees and understory plants, but again, diversity is not high.

The richness of the temperate eastern Asian and eastern North American forests has an intriguing subtext. As a general rule, south of the boreal zone similar plant communities on different continents have floras that are similar only in general ways. Some of the genera may be the same, especially widespread ones, but the species are usually not closely related. Thus, the steppes of the Ukraine and the Kansas prairies may look similar, but they share few closely related plants. It is remarkable, however, and even mysterious, that the plants of the temperate forests in eastern Asia and those in eastern North America show many similarities, even though these regions are on opposite side of the globe.

Some of the most striking examples of similarity include close species pairs found nowhere else in the world. For example, the magnificent tulip tree of our eastern forests, *Liriodendron tulipifera*, is represented elsewhere in the world only by the very similar, though much rarer and less hardy, *L. chinense* in southern and central China. *Jeffersonia diphylla*, a favorite early spring wildflower of eastern North America, is represented by one additional species, *J. dubia*, in northern Japan, Korea, northeast China, and adjacent Russia.

Even more often, there are several species in one of the areas, most often in the exceedingly rich eastern Asian region, and just one in the other. The legendary *Shortia galacifolia* of the southern Appalachian Mountains, about which a great deal has been written in these pages, has four relatives in eastern Asia: *Shortia uniflora* from Japan, *S. sinensis* from China, and *S. exappendiculata* from Taiwan, all three with solitary nodding flowers like *S. galacifolia*, and finally the exquisite *S. soldanelloides* from Japan, with delicately fringed pink or white bells, usually in a short raceme. The long-separated relatives remain interfertile: *Shortia* × *intertexta* 'Leona' (photo, p. 269) is a hybrid between *S. galacifolia* and *S. uniflora*. There are many genera with species only in eastern North America and eastern Asia; the list contains such important and familiar garden plants as *Astilbe*, *Halesia* (silver-bell), *Stewartia*, *Chionanthus* (fringe tree), *Triosteum*, and *Hamamelis* (witch hazel).

The relationships go deeper than just lists of genera found nowhere else in the world. Some of our most interesting North American cultivated species are distinctive plants with only one species in their genus—that is, they are monotypic. There is only one bloodroot in the world, our eastern North American *Sanguinaria canadensis*. Its closest relative is the Chinese snow poppy, *Eomecon chionantha*. Similarly, the unique swamp pink, *Helonias bullata*, has as its probable closest relatives species of *Heloniopsis* (photo, p. 269) from China and Japan (it is also related to species of *Ypsilandra* from China). And perhaps the closest relative to the precious Japanese woodlander *Glaucidium palmatum* (besides the rare Chinese species *Glaucidium pinnatum*, not known to be in cultivation) is the eastern North American *Hydrastis canadensis*, the goldenseal.

Not only does temperate eastern Asia hold many of the closest relatives of our eastern North American woodland flora; it also has many other fascinating features to its flora. In several of the examples above, there are one or two species in eastern North America but several to many in eastern Asia. The eastern Asian temperate flora is the richest temperate flora in the world, comparable to many tropical floras. The richness in certain plant groups can only be described as phenomenal. For example, *Rhododendron* is represented by several hundred species, and *Acer* (maples) by about 140 species. There are astounding numbers of conifers, including many endemic genera (*Cathaya*, *Cephalotaxus*, *Cryptomeria*, *Cunninghamia*, *Glyptostrobus*, *Keteleeria*, *Microbiota*, *Pseudolarix*, *Pseudotaxus*, *Platycladus*, *Sciadopitys*, and *Taiwania*).

Not only is temperate Asia rich in species numbers, it is also rich in taxonomic diversity, containing many plant families found nowhere else in the world, many of which include familiar garden plants: Cercidiphyllaceae, Ginkgoaceae, Glaucidiaceae, and Stachyuraceae are just a few examples. Eastern North America has only two endemic families, Hydrastidaceae and Leitneriaceae.

“Living fossils”—ancient species formerly widespread and well represented in the fossil record, but presently surviving only in one small area—are a striking feature of the temperate Asian flora. Examples include *Cercidiphyllum*, *Cryptomeria*, *Ginkgo*, *Metasequoia*, *Tetracentron*, and *Trochodendron*. In the case of *Metasequoia*, the genus was actually described from fossils before it was found alive in an isolated valley in central China in the 1940s.

Hardy (USDA Zones 5–6) members of primarily tropical plant families are a particularly fascinating feature of the temperate Asian flora. Of special interest to rock gardeners are shade-tolerant, hardy species in the Begoniaceae (*Begonia*) and Zingiberaceae (*Roscoea*).

How did this fascinating situation come about? The present-day distributions of plants are rooted in historical events, sometimes dating back millions of years, so their study relies heavily on paleontology. Unfortunately, the small, delicate herbaceous plants rock gardeners are most interested in do not preserve well in the fossil record. Even so, we have much information from woody plant fossils and from the fields of geology and climatology, and DNA studies can give us approximate estimates of how much time has elapsed since species separated from one another.

One important fact is that rich temperate forests, now confined to a few small areas of the Northern Hemisphere, were once much more widely distributed, forming a more or less continuous zone on land during their greatest development in the Tertiary Era, c. 15–20 million years before the present: the “Arcto-Tertiary forest.” We know from fossils that many species now confined to the rich forests of China were present in North America millions of years ago, including such legendary plants as *Davidia* (dove tree). Similarly, species in genera now known only from eastern Asia and eastern North America, like *Liriodendron* and *Nyssa* (black gum or tupelo), are known from fossils elsewhere in North America, Europe, and Asia. The implication we can draw from these fossils is that the Arcto-Tertiary forest was relatively similar in composition worldwide, rather as the boreal forest still is today. Indeed, in the middle Tertiary, land bridges between the continents probably helped with the mixing of this flora, though continental drift later pulled the continents too far apart for mixing to continue.

Since the Tertiary Era, however, the Northern Hemisphere has seen vast climatic and geological upheavals. Young mountain ranges like the Rockies, Alps, and Himalayas have been uplifted. This has had a huge impact on the climate, creating “rain shadows” and making much of the interior of North America too dry for closed-canopy forests and much of western North America suitable only for coniferous forests, and also having a dramatic drying effect on the climate in the heart of Asia.

More recently, ending only about 10,000–18,000 years ago, the patches of forest that were left by these climate changes were assaulted by the most recent of the great ice ages. Glaciers overran a huge area of temperate North America, driving the plant species southward and eliminating many that were not able to adapt. Many surviving species apparently never recovered their original preglacial ranges. Glaciers covered essentially all of temperate Europe. The extinction of the flora in Europe was much greater than in North America because the forests were squeezed between the inhospitable high Alps and Pyrenees, running roughly east-west, and the ice sheets advancing from the north, leaving little escape. This largely accounts for the species-poor European forest flora we see today. However, a continental ice sheet never overran much of temperate eastern Asia, and far fewer species were lost, though certainly there were mountain glaciers, so many species must have been reduced in range. This probably accounts for the much greater richness of the Asian temperate woodland flora: many plants that were eliminated in Europe and North America survived in eastern Asia.

This complex history is a fascinating sidelight on the species and provides conversation topics for avid gardeners, but it also has horticultural implications. It goes a long way toward explaining why some species, though now restricted to tiny areas, are hardy and adaptable far beyond their native distribution and in quite different climates. Because of their long shared evolutionary history, similar species in different parts of the globe may share similar cultivation requirements. If you can grow the American *Shortia galacifolia* well, *S. uniflora* from Japan may also grow for you. Perhaps the most amazing thing of all is that even when

disjunct species have been separated for many millions of years, as *Liriodendron* and *Shortia* have, the eastern North American and eastern Asian species can still be crossed to produce vigorous hybrid offspring that are sometimes better garden plants than either parent.

If this article has whetted your interest in temperate woodland plants, plan to attend the Eastern Winter Study Weekend in 2003; for more information, see the Coming Events section and the display ad in this issue.

Tony Reznicek is a plant systematist with the University of Michigan Herbarium, with research interests in the Great Lakes regional flora and sedges worldwide. He gardens on a city lot in Ann Arbor and is interested in rock gardening and virtually any perennial plants, including woody species. This is slowly generating more shade and an increasing enthusiasm for forest understory plants.

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Growing Pleiones in Hanging Baskets

Dick Cavender

Pleiones, popularly called “Indian crocus orchids” or “windowsill orchids,” are small terrestrial orchids from East Asia, adaptable to a wide range of growing situations. The plants arise from annual pseudobulbs, which I’ll call “bulbs” for the sake of brevity; these can be from 0.5 to 1.5 inches (about 1.5–3 cm) in diameter. In the wild, pleiones grow in the moss layer on trees, rocks, and cliffs or in the duff under rhododendrons and conifers. They require moist but well-drained soil and shade at least in the afternoon. The more commonly grown species are fairly hardy, having survived 5° F (–15° C) without snow cover in my garden, but they benefit from a winter mulch of pine or fir needles. We read that they need protection from winter wet, but I don’t provide this in my garden; they either survive or make room for something that does. Good drainage is the key. A rotting log or stump is another suitable site.

If you live in a cold-winter area, moss-lined hanging baskets are a great alternative for growing these easy, showy orchids. The baskets can be left outdoors until cold weather sets in and then allowed to dry out, stored in a cold but not freezing garage, alpine house, or similar location. The baskets are easy to assemble and require a minimum of care.

The container shown in the photo on page 270 is a 12-inch (30-cm) wire basket, which can be obtained from any well-stocked garden center. The supplier should also have bags of moss for sale, or you can collect your own. I prefer moss from trees because it usually comes off in a good-sized sheet and is easy to work with.

Line the basket with the moss and fill it with premoistened growing medium. My mix is 50 percent ground fir bark (the type used for garden mulch, with fines—not commercial orchid bark), 30 percent coarse peat, and 20 percent crushed horticultural pumice. However, just about any good commercial potting mix will work. Dump the mix in a bucket and get it thoroughly wet, because it’s difficult to wet in the basket and it will be easier to work with.

I like to add a long-term slow-release fertilizer at the same time. I use Osmocote Pro 18-8-8 with IBDU, which consists of a mixture of red, white, and green pellets and will last the entire season, though its duration depends somewhat on

temperature. The typical brown Osmocote doesn't seem to last as long and needs to be reapplied in midseason. Pleione need a lot of food in late summer, when they are forming next year's bulbs.

Fill the basket with the mix and firm it down, but be careful not to push the moss through the wire. Planting the bulbs is best done with the basket hanging. I grow these plants commercially, so I have a plentiful supply; I started with eight to ten bulbs for the basket illustrated, which had been growing for about three years when photographed. Poke a hole in the moss and insert a bulb so that the base of the bulb touches the mix. They should stay put now, but you need to be careful when handling the basket until they start to root.

Water the basket occasionally, just enough to keep the mix moist. When growth starts, it can be watered freely. Once the weather has warmed up, the basket can go into its summer location; until then, protect it from frost.

Our baskets hang under a wide porch roof on the north side of the house and are watered with an automatic drip system. The east side of a house would also be fine—any location suitable for fuchsias is also suitable for pleiones. Our drip system is a poly pipe laid in the rain gutter, with spaghetti tubes feeding into the baskets. It's supplied from a hose bibb on the house, with a battery-operated timer set to water five minutes a day. This works very well for both the pleiones and our other baskets. In low-humidity areas, watering twice a day may be required. Pleione are *not* drought-tolerant! Leave the baskets outdoors until the leaves turn brown or a hard freeze is expected.

The basket should grow well for several years. At five years old, ours now eventually need replanting, because the bulbs have become crowded. By that time, you should have enough bulbs for two or three baskets. The small bulbils produced from the old bulbs can be poked in among the larger ones and will flower in two or three years. Replanting should be done when the bulbs have lost their leaves. Be careful not to break off the sprouts. Last spring's bulb will be turning to mush, but it should have produced two or three daughter bulbs.

Flowering pleione baskets are a real conversation piece. If you plant them with several varieties, a single basket can be had in flower for about a month. Have fun!

Dick Cavender is the proprietor of Red's Rhodies in Sherwood, Oregon, specializing in both rhododendrons and terrestrial orchids, including pleione species and hybrids. See his website at <www://http.hardy-orchids.com>.

Gardens and the Environment: An Open Letter to Rock Gardeners

Geoffrey Charlesworth

NOTE: This open letter to NARGS members addresses current controversy over actual and threatened restrictions on the importation and growing in the United States of plants new or rare in cultivation. At this writing (August 2002) seeds may be imported only with a phytosanitary certificate from the country of origin. Some organizations, primarily private conservation societies, have further proposed a “white list” system under which *only* seeds of plants on a preapproved list could be imported; such restrictions now exist in Australia and New Zealand. Obviously, a “white list” would be devastating to specialty nurseries and rock and alpine gardeners, because many of the plants we grow will never be available in sufficient quantities to warrant trials. The following essay offers the thoughts of one of the Society’s most experienced members, Geoffrey Charlesworth, whose contributions to NARGS over the years are incalculable.—*Ed.*

I feel I should start with a disclaimer: I am not at all the right person to be writing this. You really need a Tom Paine, a Susan B. Anthony, or a Nelson Mandela—somebody willing to be a leader. I am not a leader, nor a missionary, nor a politician (nor am I very gullible about anything). I love alpine plants, beautiful plants, new plants. I love propagating them, especially by sowing seed and nurturing them as they develop from tiny seedlings into plants large enough to face a New England winter in my garden.

I also love a beautiful garden, especially when it is filled with the kinds of plants I *wish* I had raised myself. Thus, I am willing to buy plants from nursery growers who love those kinds of plants. I may admire a mass-produced plant, and grow it, but it won’t get the same affection as the ones I grew myself. I expect hybridizers feel the same kind of personal involvement and prefer their own creations to popular prize-winners.

Gardening seems like an innocent enough occupation, with reputable antecedents among ancient Chinese courtiers, classical Roman citizens, medieval European monks, Ottoman Turkish sultans, seventeenth-century Dutch merchants, French royals, Enlightenment Swedes, Victorian Englishmen, German horticulturists, and Japanese of every age and station—not to mention the

Czechs who found in gardening a life-enriching antidote to Communism. But now it seems that gardening is under attack.

I don't fully understand the legalities or implications of the recent edicts of the U.S. Department of Agriculture, or even how they are being enforced at this moment, but it is clear that two activities that I hold dear are coming into conflict. One is preserving nature, and the other is preserving civilization.

I am more than willing to do everything reasonable to keep our environment healthy and worth living in. I know the effects of agribusiness, mining, animal farming, and logging, but I go on eating (non-vegetarian), using petroleum products (two cars, three lawn mowers, oil furnace, gas heat for the greenhouse), reading newspapers (but not the *Sunday Times*), building extensions to the house (too big already), and generally using up at least my full share of the bounty offered by the great destroyers. To compensate, I sort my garbage and sigh over the devastated rain forests and the wholesale destruction of the habitat of wild animals, spawning salmon, and Florida waterfowl. Whatever I do seems trivial, but I shall continue (feeling guilty) until the rest of society is also ready for change.

When Europeans assumed that the rest of the world was fair game and spread across every part of a globe that seemed almost empty, civilizing (according to their lights) as they went, they carried with them objects and ideas—some useful, some sentimental, and some accidental. Along with foods, weapons, diseases, and ideologies, they carried plants: food plants, ornamentals, and weeds. Did the European settlers of Virginia grow trilliums, houstonias, and skunk cabbage in their gardens? I don't know, but they surely grew dandelions and plantains. European plant species, most of them introduced accidentally, have walked across the American continent until you can find them in every state, on every mountain and in every field.

Two escapes from early gardens, the sterile double daylily and purple loosestrife, are so well established in New England that they must have been introduced many generations ago. It is only with hindsight that loosestrife is seen as a pest but daylilies are still viewed with affection. They both have similar effects as pushy intruders into the local ecology.

It is because of such plants that government agencies are now considering banning more and more plants labeled by certain people as "noxious weeds." But how do you ban dandelions and kudzu? Of course you can't. It is too late to restore any part of North America to its pristine state. And does the word "pristine" just mean pre-Columbian, pretending that the Native Americans didn't exist, or that they had no impact on the environment? Or would you start just before humans arrived, when the mammoth and giant sloth still roamed?

By now, for instance, it is far too late to "restore" the genus *Penstemon*. The genus, like many others, is actively evolving, and we would need more than isolated stands of individual species to go back to square one. This large genus needs the whole continent to do its thing—much as the buffalo needs a vast range, unless we are content to keep it in the equivalent of a big zoo. Reversal to the Garden of Eden will never happen. Effectively, Americans (and humans in

other regions) have stopped evolution on the grand scale. Instead of new species being formed "naturally," they are being eliminated by habitat degradation.

Gardeners, obviously, cannot save a particular *Penstemon* species from the oilmen or the ranchers, nor can they realistically save many species from extinction (despite the positive example of *Tecophilaea cyanocrocus*). But they can at least enjoy a species' beauty and grace while it is still here. They can do this by taking a few seeds (a few dozen out of multitudes), growing them to flower in their own gardens, and propagating them for other gardeners.

From the golden age of plant discovery up to as late as the 1970s, it was considered ethical and even laudable to go into the mountains and other wild places and dig up a plant or two for study or personal enjoyment. This attitude among "elite" gardeners changed rapidly from the late 1960s as environmental concerns became urgent. By now, every gardener I know opposes plant collection in the wild, unless in the path of a bulldozer. Taking one plant would not materially affect the lavish display put on by nature in the perfect habitat, but allowing one collection would give the green light for thousands, and a greedy entrepreneur would soon come along to complete the extinction.

This change had to come when travel to wild places suddenly became possible for everybody. Travel and exploration used to be pursuits for the rich and privileged, and then they became available to the curious and adventurous poor. Now, everybody goes to the North Pole. The worst scenarios are now reality. It is no use protesting that mountain bikers, careless hikers, and hunters do the damage. They are us. Besides, gardeners do a bit of their own destruction by buying from unscrupulous mass harvesters of trilliums, cyclamens, and Chinese rarities. We, too, have sap on our hands.

When this change of public opinion occurred, it was inevitable that an attack on seed-collecting would follow. I had no guilt feelings about it, myself. Taking four or five capsules of *Campanula barbata* in the Swiss Alps is like picking up a shell on a Florida beach. It is barely a mouthful for a Swiss marmot. The question of ethics has little to do with locality, and much more to do with the effect on the plant community—and whether you want to risk going to jail. A good gardener would always consider the quantity of seed available, and would not harvest wantonly, and never in a national park.

It has always been more enjoyable for me to buy seeds from collectors who go to places I could never go. This is truly exciting. I have taken immense pleasure from the travels and knowledge of Josef Halda, Josef Jurasek, Jim Archibald, Gwen Kelaidis, Alan Bradshaw, Vojtech Holubec, Marvin Black, Sally Walker, Rebecca Day-Skowron, Phyllis Gustafson, and Ron Ratko. Not one of them has become rich collecting and selling seeds. They are all the same kind of eccentric as most of the gardeners they sell to. They couldn't get rich, in fact, because there are not enough people in the world with the skill to grow these plants and the intense interest to take the trouble. In "our world," there are only three or four thousand potential customers; and in the unlikely event that every one of them sowed as many seeds as I do, that would only amount to a few million seeds—fewer than are produced by two or three plants of *Papaver somniferum*.

What shall we do, then, if the government forbids free passage of seeds into the United States? I have no solution with any hope of success. Somebody has to work up a strategy, though, or U.S. gardeners will face a very bleak future. If there are no more seeds imported, gradually all the "difficult" species now in gardens will die off. There would be no more aetian androsaces, no *Physoplexis comosa*, no *Kabschia saxifrages*, no *Dionysia*. No new species of any genus would reach us from the newly accessible mountains of Central Asia, China, and (some-day, we hope) Afghanistan. There would be no reintroductions of old favorites from Europe, North Africa, the Himalayas, and the Caucasus.

There are a few things everybody can do:

1. Stop using the word "weed" loosely. Never use it jokingly or ironically, as in "*Campanula poscharskyana* is weedy," when you mean "vigorous," or just "too vigorous to plant next to an androsace." Such hyperbole may be used to condemn the plant mentioned as "noxious"—the equivalent of cheat grass in Nevada or hawkweed in New Zealand. In fact, it would be unlikely for *Campanula poscharskyana* to survive a year in an eastern forest, much less take it over. The word "weed" becomes inappropriate when used within hearing of anybody who is misinformed about which weeds are truly noxious.

2. Correct people who make outrageous claims about plant behavior by challenging their knowledge of how and where particular plants grow. Make them produce evidence for claims when you think you know better. You have valid experience from gardening and can probably refute claims such as "All salvias are weedy." Nearly every universal claim of this kind is flawed. You can use the word "misinformed" rather than "ignorant" to describe such statements. Remember, you are talking to a person with the same motive as yours: to save the environment. Your strategy is to gain an ally, not to reinforce a conflict.

3. Do not tolerate growing a plant that is beyond your control—even bishop's weed (*Aegopodium*). It would be wrong for a nursery to sell such a plant. Nobody is likely to import it. It must never appear on a seed list. It is probably an inherited weed of every garden in the East, and gardeners are eager to get rid of it. This is true of a small set of "old-fashioned" garden plants. If you know of a nursery selling a plant you believe is a weed, you should inform them and expect an explanation.

Now I arrive at the final reason why I am the wrong person to be sounding off in this strident way. I am 81 and childless, and I don't believe in reincarnation or "life after death." Why should I care? Well, I do care because I am human and, I hope, civilized. Humans hardly deserve the Earth they are desecrating, exploiting, and consuming so recklessly, and yet I know that, like me, they love beauty and knowledge; and I believe they will muddle through all their silly loyalties and greed to become rational enough to preserve whatever beauty is left. This includes all the other animals, and definitely all the plants.

NARGS National Awards 2002

Jim Fox

Marvin Black Award: Marion Jarvie

The Marvin Black Award was established in 1990 to recognize members who excel at promoting membership in NARGS, organizing study weekends and national meetings, and planning trips to study plants and meet other plant people, as well as helping others to reach their potential in the plant world.

Marion Jarvie of Thornhill, Ontario, meets all these requirements and excels in all of them. She teaches and lectures locally and internationally, and not just at rock garden meetings. Regardless of her speaking topic, she always finds a way to mention rock gardening and NARGS and to suggest that audience members should join their local NARGS chapter and the national organization. A common refrain at her local chapter meeting is "I took one of Marion's classes and it changed my life."

She has been program chair of her local chapter bringing in speakers from around the corner, from across North America, and from around the world. She has been actively involved in planning past and future study weekends, and she still finds time to lead or plan field trips to study plants in the wild in such diverse places as Colorado, Idaho, Patagonia, South Africa, New Zealand and Yunnan. She is a superb plantswoman, too, rigorously evaluating every plant for performance, suitability, and potential invasiveness. Plants not up to any of these standards are ruthlessly weeded out and composted. Fortunately, the winners are propagated and spread around to admiring gardeners.



Sheila Paulson describes Marion Jarvie as “a most willing teacher, sharing her knowledge, her experience, her garden and plants, lifting a gardening organisation’s professional and practical reputation, and always encouraging individuals, members or not.” Panayoti Kelaidis, in his letter of nomination, calls Marion “lovable, exuding charisma, with enormous ambition and a zest for living life to the fullest, with elegant style. Marion’s voracity for plants is exceeded only by her poise. I believe Marion merits a lot of kudos and notice from a grateful society for what can only be called the Canadian Renaissance of rock gardening.”

Carlton R. Worth Award: Rex Murfitt

Twenty-two years ago, this award was created to honor Carlton R. Worth, whose writings enlightened many an individual’s way to understanding and growing rock plants. This year’s award recipient, Rex Murfitt of Victoria, British Columbia, has written widely on rock and alpine plants in the *Rock Garden Quarterly*, specialist journals, and national gardening magazines. His articles have taken some of the mystery out of growing alpine plants, helping all of us understand their often simple needs and their manifold pleasures. A partial list of topics he has covered includes *Fritillaria*, alpine house growing techniques, *Draba*, September in the rock garden, dwarf conifers, saxifrages (perhaps his greatest botanical love), and *Silene*. He has even asked such questions as “Sempervivums: Do we give them a fair chance?” With Joyce Fingerut, he coauthored the informative and award-winning book *Creating and Planting Garden Troughs*.



Born in England, Rex trained under the legendary Walter and Will Ingwersen at Birchwood Farm Hardy Plant Nursery in the shadow of Gravetye in Sussex, an auspicious start for the future gardener and author. There he learned the art of propagating and cultivating alpins. He then moved to New York, working for Frank and Anne Cabot as they started Stonecrop Garden and Nursery. Rex’s next move was to British Columbia, where he now lives and is actively involved in the Vancouver Island Rock and Alpine Garden Society. His garden, alpine house, and trough collection have been seen by hundreds who attend the popular winter study weekends in Victoria.

Award of Merit: Harry Dewey

The achievements of this year's Award of Merit winner are unique in the history of NARGS. Harry Dewey of Beltsville, Maryland, has devoted a phenomenal amount of time, energy, and enthusiasm to various efforts to bring rock and woodland gardeners together. He is a plantsman of recognized talent and shares the skills and lessons he learns from growing plants with others through writing, lectures, and a willingness to answer budding members' questions.

Harry has served NARGS and his local chapter in many capacities, always with a forward-looking approach. He was quick to see the potential of the Internet in its earliest days. Whether we use the Internet directly or not at all, we all benefit from the information it supplies the many contributors to the *Rock Garden Quarterly*. With a background in library science and an expansive love of plants, Harry was a natural to start gardening lists on the Internet. He served as a "sysop" (system operator) on the Genie server's garden discussion lists before venturing to start an alpines-related forum in February 1995: the discussion list RGJ (Rock Garden Journal), which he ran "by hand." Suffering from lack of automated software, RGJ was soon suspended, but then Eric Gouda, curator of the Botanic Gardens at Utrecht, the Netherlands, offered the fledgling rock garden list a home at the established Listserve site at SURFNET, the Dutch arm of the Internet. Harry agreed; Eric chose the name "Alpine-L"; and the rest is history.

Harry has devoted himself to running this list every day since. He is a supremely able moderator, bringing warmth and humor to calm budding disputes and establishing a comfortable atmosphere for new recruits. He is a man of substance, and substance is what really counts in the end. Disagreements can evaporate or be resolved, but achievements remain. Harry has given much publicity to NARGS study weekends, annual meetings, and the seed exchange, and he encourages Alpine-L members, some whom are not NARGS members, to visit the NARGS website to check out the advantages of joining.

As Louise Parsons said in her nomination, "It would be wonderful if the rock garden club leaders of the planet could get together and create a special international award that is befitting of Harry's accomplishment. In the meanwhile, let us award Harry with the NARGS Award of Merit as a token of our deep appreciation and thanks."



In Memoriam: Lawrence P. Crocker, December 8, 1905–June 28, 2002

Lawrence P. Crocker, co-founder of Siskiyou Rare Plant Nursery in Medford, Oregon, was a generous and gentle man. He lived a long life nurturing people, plants, and many other interests. Lawrence corresponded with friends around the world and hosted a constant flow of visitors from near and far. He was diligent in collecting and sending seeds to his many personal seed “connections” and for many years was noted for his large contributions to many organizational seed exchanges. He also served as seed exchange director for NARGS.

Until just a few years ago, Lawrence warmly welcomed traveling friends as guests in his home. And until very recently, many garden-loving people took Lawrence up on his invitations to visit his garden and, of course, to leave with a box of assorted plant treasures. As Lawrence showed visitors around this garden, he was always ready with trowel in hand to dig and give away generous portions of any plants people admired. As recently as February 1997, when the Siskiyou Chapter of NARGS hosted the Western Winter Study Weekend, many attendees went home with plant gifts from the Crocker garden. Recent comers to rock gardening thus will join the many others who remember Lawrence as a remarkably generous and gentle man.

Lawrence came from Alta Loma, Texas, to live in the Rogue River Valley of southern Oregon when he was twenty. In 1929 he married Mary Turnbow, who preceded him in death. In 1940, he married Jewell Hurst, who died in 1985. Jewell was very active with Lawrence in the local rock garden club. Lawrence is sur-



vived by his son, Phillip, of Medford; stepdaughter Jean McFarland; and seven grandchildren. His son David died in Vietnam.

Lawrence worked as a post office clerk in Medford and Central Point for 39 years. In addition to his long love affair with rare plants, he was a founding member of the Roxy Ann Gem and Mineral Club; his large mineral collection has been donated to the Crater Rock Museum in Central Point, Oregon. He was active with Troop 4 of the Boy Scouts and was a member of the Presbyterian Church. Quite privately, Lawrence was also a prolific and talented poet; most of his friends did not know about his large collection of clever, sensitive, and often humorous verse until after his passing, when several pieces were read at his memorial service. It is hoped that his works will eventually be published.

In 1964 Lawrence, along with his friend and fellow postal worker Boyd C. Kline, published the first mail-order catalog of the Siskiyou Rare Plant Nursery. Under the tutelage of Marcel LePiniec, a French horticulturist transplanted to southern Oregon, the founders were inspired to begin propagating and shipping out rare native plants of the Siskiyou Mountains. Their first catalog listed 125 formerly unavailable species. That first year, customers bought everything they had grown. Word of the nursery spread throughout North America and even overseas, and soon Lawrence and Boyd were corresponding and trading with many experts.

In 1978, Jerry Cobb Colley and I visited the homes of both men, which served as the two locations of the nursery. Within a few hours of getting to know Jerry and me, Lawrence and Boyd suggested that we purchase the nursery from them, and purchase land nearby where we could relocate the nursery. We took them up on their offer. After running their thriving little nursery for sixteen years, well into their retirement, both founders were happy to find two guys as crazy as they were about spreading these marvelous plants around the world. From the day Lawrence and Boyd helped us unload our moving van at the nursery's new Medford location, they continued to be dedicated teachers, instructing and inspiring us with their own unique blend of enthusiasm and patience. For the next nearly 24 years, Lawrence continued to share knowledge and plants generously.

Lawrence's knowledge and friendship will be sorely missed by all who knew him, but his rare plant legacy lives on.

BALDASSARE MINEO

A photograph of Daphne × susannae 'Lawrence Crocker', one of the many plants selected and distributed by Siskiyou Rare Plant Nursery, appears on p. 265.

Plant Portraits

Western American *Asarum* Species

LOREN RUSSELL, Corvallis, Oregon

Five of the six American species of *Asarum* are native to the Pacific slope. Of these, *A. caudatum* has the most northerly distribution and is the best known. It is easily distinguished by its cordate, unvariegated leaves, elegantly tailed sepals, and mat-forming habit. Its range extends from southern British Columbia inland to Idaho and western Montana, and south along the coast to the Santa Cruz Mountains of south central California. It is an easily grown groundcover for cool shade in the Northwest, and unlike the others, is usually slug-proof.

Asarum lemmonii takes the place of *A. caudatum* at moderate elevations in California's Sierra Nevada. Also mat-forming, it differs from *A. caudatum* in its broader, more reniform (kidney-shaped) leaves, and shorter, evenly tapered sepals.

A very local, little-known species, *Asarum wagneri* is found in *Abies* (true fir) forest and subalpine parkland near Mount McLoughlin in southwestern Oregon, and at one locality in the southern Willamette River drainage of western Oregon, where it grows in open meadows. *A. wagneri* has green, reniform leaves of thinner texture than the other western species, emerging in clumps from deeply buried rhizomes. The sepals are usually green, shorter than in *A. caudatum*, and often have short hooks at the tips.

The two species with variegated foliage, *Asarum marmoratum*—this issue's cover subject—and *A. hartwegii*, are very closely related and are often confused in cultivation. In addition to the marbled foliage, they share a clumping habit, with leaves arising from short internodes on vertical, deeply buried rhizomes. The two are most easily distinguished by the color of the inner surface of the calyx tube: this is brown in *A. marmoratum*, and green with purple stripes in *A. hartwegii*. Their ranges are also distinct: *A. marmoratum* occurs in southwestern Oregon and northwestern California, while *A. hartwegii* is found in the Sierra Nevada and the southern Klamath Mountains. Both species are primarily forest plants but can often be found growing in full sun, especially in roadside gravel and scree. On one occasion, I saw a beautiful clump of *A. marmoratum* growing in a vertical crevice next to *Penstemon rupicola*. Unfortunately, these beautiful gingers are ungrowable unless protected from snails and slugs. Like the similar-appearing *Hexastylis* species of eastern North America, these are both excellent container plants.

Books

Fern Grower's Manual, by Barbara Joe Hoshizaki and Robbin C. Moran.
Revised and expanded edition. Timber Press, 2001. 604 pp., \$59.95.

Reviewed by C. COLSTON BURRELL, Free Union, Virginia

I have indulged two overriding passions all my life: reading and listening to music. Imagine my delight, then, at finding an intimate, independent store that sold both books and records, long before the advent of ubiquitous and impersonal superstores. Books, Strings and Things in Blacksburg, Virginia satisfied my craving for art, science, horticulture, and literature. I bought the original edition of Hoshizaki's *Fern Grower's Manual* there when I was a starving undergraduate in the 1970s. Ferns had long been a favorite of mine, and I was growing more than 30 native species in my garden, but this book opened my eyes to the diversity of ferns worldwide. Like my youth, the bookstore is long gone, but the *Manual* is immortal!

Fern Grower's Manual was an instant success when first published in 1975, and this new edition is destined to become a classic. What sets it apart from other books on the subject is its extensive coverage of subtropical and tropical ferns as well as the more familiar temperate genera. The second edition adds 35 new genera and more than 300 new species and cultivars, expanding from 256 to 604 pages. In all, it covers 700 species in 124 genera, including ferns and fern allies such as spike mosses (*Selaginella*), club mosses (*Lycopodium*), and horsetails (*Equisetum*).

Encyclopedia entries have been expanded from their original chartlike shorthand to full text for each genus and species, including detailed botanical descriptions, native habitats and ranges, USDA hardiness zones, and cultural information. Illustrations include very useful line drawings and frond silhouettes, details of pinnae and sori, as well as rhizome, stipe, and scale details where useful for identification, all drawn to scale. Black-and-white habit photos are included for many species. A central color section featuring landscape and habit shots adds to the book; disappointingly, though, some of the photos are out of focus.

Fern Grower's Manual is much more than a rote encyclopedia, however. The authors cover everything a gardener needs to know about ferns. Excellent chapters on the unique structure, nomenclature, and botany of ferns provide a firm foundation on which to explore the many facets of distinguishing and growing these ancient plants. Culture—including soil, moisture, light, and planting tech-

niques for indoors and out—is thoroughly addressed. The chapter on propagation is still one of the best, and the first edition taught me most of what I know about the subject, including both sexual and asexual techniques. The “Landscaping” chapter takes the unique approach of using ferns to solve specific landscape problems and provides extensive reference lists of ferns for various situations, from sunny or dry spots to specialized rockeries for rare, hard-to-grow species. “Growing Special Ferns” thoroughly covers indoor culture and display. Though admittedly few, pests and diseases are expertly considered as well.

The only flaw of this book is that much of the cultural information is geared to growing ferns in containers rather than in the ground, which was my only criticism of the first edition. This is due, in part, to the fact that many genera are of limited hardiness in North America outside of California, Florida, and Mexico.

Barbara Joe Hoshizaki, professor emerita of botany at Los Angeles City College and a president of the American Fern Society, has devoted much of her life to ferns, researching, and writing about their botany and horticulture, as well as serving as president of the Los Angeles International Fern Society and other fern groups. Her co-author, Robbin C. Moran, associate curator at the New York Botanical Garden, is also well versed in the botany and horticulture of ferns. He is an associate editor of the *American Fern Journal* and has studied ferns in Latin America and Asia. Their combined experience has enriched the second edition. If you have more than a passing interest in ferns, you must have this book. *Fern Grower's Manual* is an authoritative reference that is sure to remain at the pinnacle of fern literature for decades to come.

Bulbs, by John E. Bryan. Revised edition. Portland: Timber Press, 2002. 523 pp., 1,171 color photos. ISBN 0-88192-529-2. Hb, \$89.95. Available from NARGS Book Service.

Reviewed by JOHN GRIMSHAW

I could never bring myself to buy a copy of the first, two-volume edition of John Bryan's *Bulbs* (1989), as my browsing of it in the bookshop had revealed a plentitude of errors in both text and illustration captions. It was therefore with some trepidation that I embarked on the review copy of the second edition, now combined into one substantial volume.

Bulbs is an encyclopedia of plants with a swollen perennating organ, valuably embracing many genera of dicotyledons as well as the expected petaloid monocots. As the author remarks, drawing a line is difficult, but his definition of “bulbous” is often surprising, and the climatic qualifications for an entry are erratic. The inclusion of monocots with fleshy roots but no swollen storage organ, such as *Agapanthus*, *Hemerocallis*, and *Kniphofia*, is understandable; however, it is perverse to include a long list of *Aconitum* species, but not most of the numerous species of *Delphinium* with swollen roots and undoubted geophytic behavior. *Caladium* and *Canna* are in, but the much hardier *Cautleya* and *Hedychium* are

excluded as “essentially tropical” members of the Zingiberaceae. What, then, is the included plant *Amorphophallus titanum*?

The bulk of the book, after useful introductory chapters on the history, botany, and cultivation of bulbs, is given over to the descriptions of the plants. It is a remarkable selection, in alphabetical order. Nowhere else can one conveniently find a list of, for example, 33 *Gagea* or 79 *Geissorhiza* species, and this comprehensiveness is probably the book’s strongest point. Unfortunately, in many cases its value is impaired by the paucity of information provided, and most cultivars are excluded. Extreme cases, from the genera just mentioned, are the entries: “*Gagea bithynica*. Turkey. Similar to *G. chrysantha*.” “*Geissorhiza kamiesmontana*. South Africa (Namaqualand); rare.” Indeed, one feels that the book is the result of a trawl through the literature, and that the author has little familiarity with many of the plants he is describing. This is highlighted by the entry for the genus *Lilium*, presumably Bryan’s favourite genus after his time with the Oregon Bulb Farms. Here the entries are interesting and informative, and we get to feel a personal involvement with the plants, sadly lacking in most other entries.

Even so, there are flashes of humor in unexpected places. The very dull *Simesthis planifolia* is said to be “uncommon, which is possibly its greatest attraction.” Elsewhere we learn that an infusion of the roots of *Pelargonium luridum* is used by the Zulus medicinally, and that “young men rub their faces with a mixture of the powdered root and hippopotamus or python fat to charm the opposite sex.” Do I sense an opportunity for the manufacturers of male beauty products in Zululand?

A firm editorial hand is evident throughout much of the text, and the result is a great improvement on the first edition. It is regrettable, therefore, that the opportunity was not taken to upgrade the illustrations, many of which are dingy and dated. Far too many are simply out of focus, and a smattering are still incorrectly named. Some are nothing but a disgrace to a work of this stature, and I am astonished that the author and picture editor can tolerate such horrors. It is absurd to excuse a black picture supposedly—one simply cannot see it—of *Asarum caudatum* with the caption “Not the easiest flower to photograph.” As with the text, however, the assemblage of images of bulbous plants is wider than in any other single reference, and therefore extremely useful.

Encyclopedic tomes are no substitute for detailed monographs, but since these are often expensive and difficult to obtain, an encyclopedic treatment is an essential starting point. *Bulbs* is just that. John Bryan is a communicator, not a botanist, and he expresses his hope that his book will stimulate gardeners into further appreciation of the world of bulbs. I am sure it will do so.

A Synopsis of the Genus Pleione, by Phillip Cribb and Ian Butterfield. *Orchid Digest*, vol. 65, no. 4 (2001). \$10 from Orchid Digest, P.O. Box 10360, Canoga Park, CA 91309.

Reviewed by MARCEL JOUSEAU, St. Paul, Minnesota

The genus *Pleione* is comprised presently of about 20 species and natural hybrids. Its geographic distribution is limited to Taiwan, central and western China, Thailand, Vietnam, Laos, Myanmar, Bhutan, India and Nepal. The species are mostly alpine, many of them growing at 10,000–11,000 feet (over 13,000 feet in the case of *P. scopulorum* and *P. hookeriana*). Pleiones are quite popular in western Europe, Japan, New Zealand, and Australia, but to date, a fairly limited appeal to gardeners in the United States. Most species in this genus can be completely ignored for the four or five months of their rest period, during which they need no water: my kind of plant!

The *Orchid Digest* has produced a colorful 24-page offprint on these alpine orchids, which it is making available as a separately bound large-format booklet. The two authors, Butterfield and Cribb, are well versed, respectively, in the culture and taxonomy of pleiones. Ian Butterfield has grown, hybridized, and sold them for the past 30 years, and holds the National (UK) Plant Collection for Pleiones. Phillip Cribb, curator of the Orchid Herbarium at Kew (England), has a long history of taxonomic work. Butterfield and Cribb (1983, 1988, 1999) have produced two books and a special issue of *Curtis's Botanical Magazine* on these plants.

Although a few articles on pleiones have appeared in various journals, the present *Synopsis* is by far the most comprehensive presentation of this genus in an American periodical. It is generously illustrated with more than 75 photos of natural habitats, species, and hybrids. The authors provide information on the ecology of pleiones, as well as an extensive section on cultivation in the form of a calendar of care through the annual growth cycle.

There is a brief section on outdoor cultivation—unfortunately, not useful to most North American growers, who need a better understanding of the climates and conditions under which these species grow in order to apply this information to their own local conditions (see Jouseau 1981). This is a pity, since such species as *P. formosana* and *P. limprichtii* and their hybrids should be amenable to outdoor cultivation in the milder U.S. regions. For several years, I managed to maintain a few “bulbs” of *P. formosana*, with a light mulch, outdoors in Minnesota (not usually considered a “milder region”).

In my experience, pleiones are susceptible to few pests and diseases, though several problems can be deadly. A shortcoming of the *Synopsis* is the lack of information on pests, diseases, and cultural problems; the authors refer the reader to their 1999 book for such information.

Cribb and Butterfield describe all known species, natural hybrids, and a few hybrids. The taxonomy of pleiones has been subject to numerous revisions and remains far from settled. Gianantonio Torelli (2000) offers arguments for a taxo-

nomic arrangement different from that used by Cribb here. Cribb and researchers at the University of Leiden (Gravendeel et al. 2001) are working on the phylogeny of the genus, and we will probably see additional taxonomic changes in the near future. Moreover, increases in the number of botanical expeditions to Southeast Asia have the potential for the introduction of new species, as well as new forms of known species.

Hybridization in the genus began with Georges Morel of France, who registered the first hybrid, 'Versailles', in 1966. Since then, almost 200 hybrids have been registered. These hybrids offer most interesting hues resulting from the mixing of lavender/magenta and yellow.

The *Synopsis* includes an extensive list of references, although this could easily be expanded. In summary, the *Orchid Digest* has published an excellent, colorful introduction to pleiones and a guide to their cultivation that should increase interest in this genus, even among rock gardeners. The addition of a geographic distribution map and pests/diseases section would have made this synopsis perfect.

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NARGS COMING EVENTS

Eastern Winter Study Weekend: "Lost in the Woods" (the shady rock garden), Jan. 24-26, 2003, Ann Arbor, Michigan. Host: Great Lakes Chapter. Contact: Michael Kaericher, 8171 Brookville Rd., Plymouth, MI 48170 <mkaericher@alum.mit.edu>

Western Winter Study Weekend: "Treasures of the Plant Hunters," Feb. 28-Mar. 2, 2003, Vancouver, British Columbia. Host: Alpine Garden Club of British Columbia. Contact: Moya Drummond, 3307 W. 6th Ave., Vancouver, BC V6R 1T2 <moyadrummond@shaw.ca>

2003 NARGS Annual Meeting: "Rush to the Rockies" at Beaver Run Resort, Breckenridge, Colorado, July 8-13, 2003, hosted by the Rocky Mountain Chapter. Contact: Mary Komodore, 25298 Foothills Dr. N., Golden, CO 80401, tel. 303-526-1054

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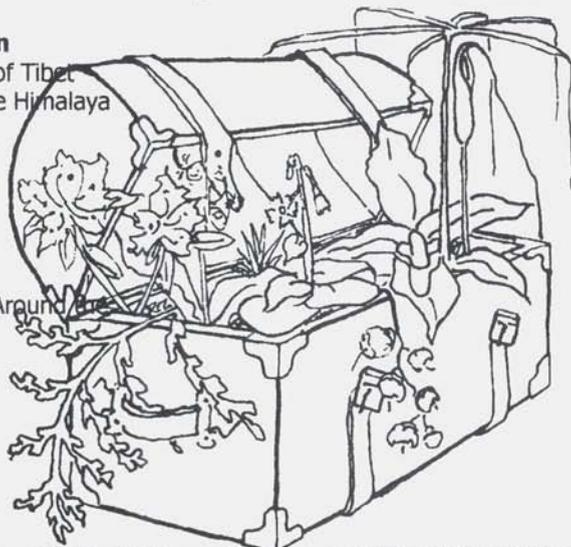
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Corrigenda

- 60.1, p. 46: The plant identified as *Senecio skottsbergii* is not that species, but an unidentified one.
- 60.1, p. 57 and photo on p. 48: Author Anna Leggatt reports that the plant grown under the name *Daphne kosaninii* is identified as *D. domini* by Josef Halda in his recent monograph, *The Genus Daphne*.
- 60.2, pp. 129–131: Photos credited “T. C. Cochrane” should be credited “T. S. Cochrane.”

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