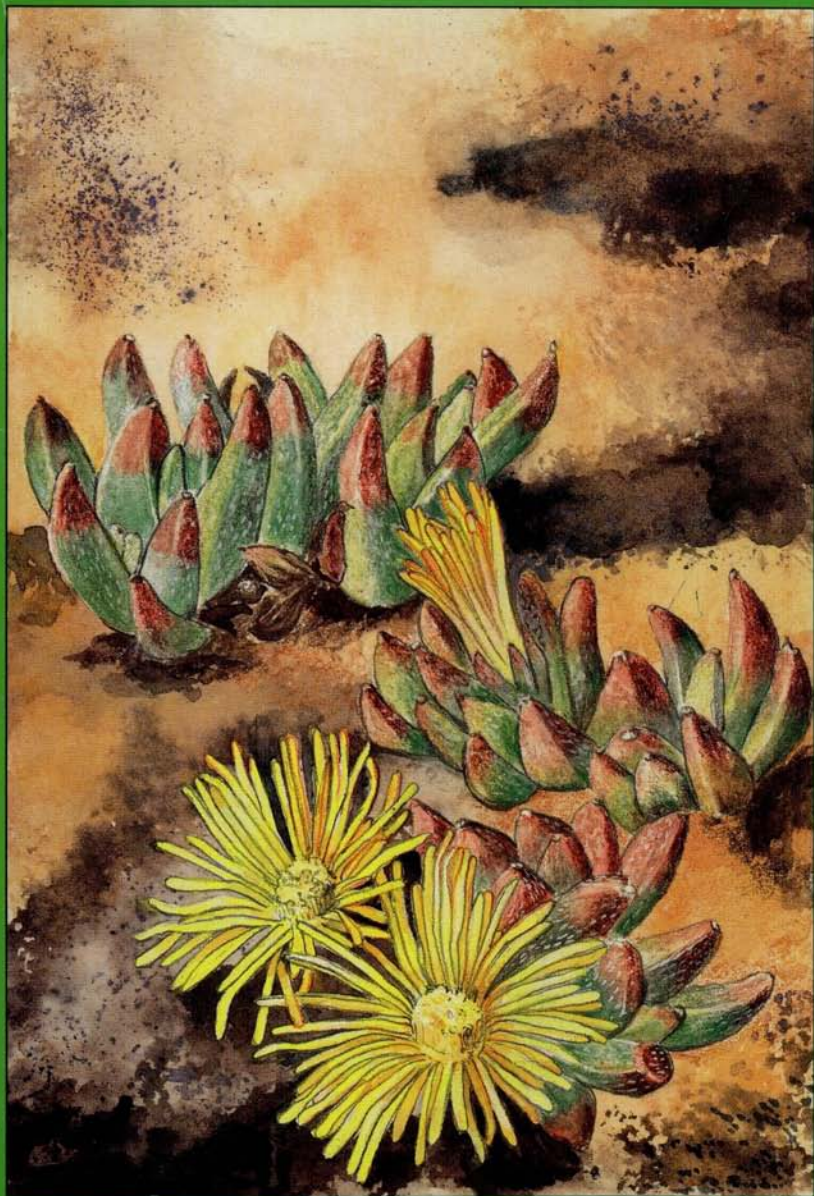


# ROCK GARDEN



## QUARTERLY

VOLUME 56 NUMBER 3

SUMMER 1998

COVER: *Rabiea albipuncta*

by Susan T. Fisher, Denver, Colorado

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# ROCK GARDEN

## QUARTERLY

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BULLETIN OF THE NORTH AMERICAN ROCK GARDEN SOCIETY

VOLUME 56 NUMBER 3

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*Sedum middendorffianum*



# SEDUMS

## YOU SHOULD KNOW

by David H. Heller

Reginald Farrer in his classic work on the English rock garden dismissed the sedums as a "vast race" that "is curiously uninteresting." Clarence Elliott later concurred, remarking that "As a class they are important in the rock garden and yet I feel neither affection nor enthusiasm for them." Nevertheless the sedums have never been without both scholars and advocates. In 1921 R. Lloyd Prager wrote his exemplary *Account of the Genus Sedum as Found in Cultivation*, and Harald Fröderstrom in 1936 published his vast systematic essay on "The Genus *Sedum* L." In 1983, Ronald Evans in his *Handbook of Cultivated Sedums* (Science Reviews Ltd.: Northwood, England, now out of print) wrote that "Anyone who has a garden is likely to have some type of stonecrop growing in it, and very likely, more than one kind. But of all the plants therein, it is the stonecrop which is least likely to be named or even recognized as such." Ray Stephenson in 1994 remarked in *Sedum, Cultivated Stonecrops* (Timber Press: Portland, OR) that "The genus *Sedum* is much neglected by general gardening books but always popular with gardeners who realize plants do not have to be ostentatious, expensive or difficult to grow to be charming...Few gardens have no stonecrops, and few alpine specialists deny the versatility of the genus."

Researchers have continued to study sedums and their allies, yet in the past five decades no one has, to my knowledge, attempted a comprehensive taxonomic overview of the genus. On the positive side, there is now an active international Sedum Society (55 Beverly Dr., Choppington, Northumberland, UK, NE62 5YA) that has a devoted membership and an excellent quarterly *Newsletter*.

One of the most popular plants in American gardens today—perhaps it's a bit too popular—is *Sedum telephium* 'Autumn Joy', while *Sedum spurium* 'Dragon's Blood' continues to flow on its sanguinary way. On the other hand, unlike the situation just a few years ago, not a single nursery advertising in the *Rock Garden Quarterly* now names sedums as a specialty. And too many rock gardeners still dismiss all sedums as unattractive, absurdly easy to grow, terribly invasive, and maybe just a general nuisance.

It is my purpose to call attention to just a few sedums worthy of rock gardens. All conform to Borkovec's One-Foot Rule (see *Rock Garden Quarterly* 56[1]:p. 60).

All on the list are perennials, unless otherwise noted. Perhaps a hundred other sedums could have been nominated instead of these, and if someone else compiled the list, they might have been. This article makes no pretension to being the last word on the subject. Most species listed below are currently being grown and studied at the Chicago Botanic Garden (1000 Lake Cook Road, Glencoe, IL 60022), where I have had the privilege of serving as a volunteer for the past ten years or so. Richard G. Hawke, the coordinator of plant evaluation, is now preparing an issue of the Garden's valuable *Plant Evaluation Notes* to be devoted to the sedums of the Botanic Garden.

*Sedum album* var. *murale*

One plant every rock gardener should certainly know and grow is *S. album* var. *murale*, a form of a popular European species. *Sedum album* is noted both for its hardiness and for its ability to transform itself under different growing conditions into plants that are attractive but have little resemblance to their ancestors. Thus, in various so-called varieties the leaves may appear in a continuous range anywhere from long, bright green sausages almost an inch in length, when grown under lush conditions; to tiny, globular, red cherries when grown in poverty, as between paving stones. The small flowers are white or pinkish. In the recommended variety *murale*, the leaves are smaller than the type, usually show a deep maroon or brown color, and do best in hot and dry situations on walls—as the name implies. They are particularly attractive when used to fill small holes or crevices in the rocks. Admittedly, the plant does have some tendency to spread to places where it is not wanted, but this can be easily turned to advantage. When we pull up the tiny individual strays in the garden, we try to immediately set them with their minuscule root balls into any nearby hole in the rocks, where they amiably establish themselves. As an added bonus, most selections of *Sedum album* have a tendency to form attractive crests, and some gardeners collect these forms also.

*Sedum middendorffianum* var. *diffusum* (photo, p. 182)

Another sedum every rock gardener should grow somewhere is this 5"-tall groundcover that has graced the Chicago Botanic Garden for many years. Every spring it bursts forth with abundant, nickel-sized, golden flowers and follows up with long-lasting, crimson, star-like fruit. The second sedum to flower in my garden, it is preceded only by *S. ternatum*. The foliage has an attractive, mid-green color all year and interesting dentate-crenate margins on the leaves. It has more than proved its hardiness in the fickle midwestern climate; it grows vigorously in sun or partial shade and is not picky as to soil type. While it stands its ground against encroaching plants, it does not intrude on them. "Spring Joy" grows readily from seeds or cuttings. In my opinion, the only reason why this paragon of sedums is not used even more widely is a matter of nomenclature. "What's in a name?" muses Juliet before she learns that the sad answer to her own question is "a hell of a lot."

In this case our excellent plant suffers most from not having any widely used common name. The situation is exacerbated by its close relationship to *S. kamtschaticum*, itself a highly variable species that intergrades with *S. middendorffianum* even in nature. The species are distinguished by technical differences, nicely discussed by Stephenson. Meanwhile several competing quasi-scientific

names, all lengthy and awkward and unpronounceable by a gardener without sounding either facetious or pretentious, may be assigned to similar plants. Among them are *Sedum kamtschaticum*, *S. ellacombianum*, and even *S. kamtschaticum* var. *floriferum* 'Weihenstephaner Gold.' Leaving the question of the correct scientific names and identification of individual cultivars offered in the nursery trade to wiser heads than mine, I now have the temerity to propose that we start using "Spring Joy" as a badly needed nonce or common name for the selection that we grow in Glencoe. The choice of this name is a transparent attempt to build on the success of the ubiquitous 'Autumn Joy', but the suggestion may nevertheless fill a need. Meanwhile, the important thing is for everyone to grow such beautiful plants.

*Sedum spurium* 'Tricolor' (photo, p. 183)

So-called "new" cultivars of *Sedum spurium* often appear in nursery lists. They usually turn out to be merely selections of plants that seem to have redder leaves than most. Unfortunately, such variations sometimes revert to type and lose their distinctiveness. The cultivar 'Tricolor', introduced several years ago, appears to be a genuinely valuable mutation, and it is a dandy, especially when grown in full sun. Since its introduction, its popularity has grown steadily. While the flowers are pinkish and rather undistinguished, the leaves are beautifully variegated in red, green, and white, the national colors of both Italy and Mexico. In addition, the plants exhibit the legendary hardiness and vigorous growth for which the *S. spurium* cultivars are known. This variety is attractive both as a single specimen and as a large grouping, where it will paint a miniature revival of the pointillist school of post-impressionism. It certainly deserves to be even more widely grown as a year-long source of color for any garden.

*Sedum ternatum* (photo, p. 183)

Most of the sedums commonly grown in North American gardens were brought here from Europe or Asia, but this one is a genuine, native-born American, and a hillbilly at that, originating in the Appalachian Highlands. It is unusual among sedums in having roundish leaves arranged in whorls of three, or occasionally two opposite each other. It is also unusual in having flowers with four white petals instead of the much more common five yellow petals. In nature, it is a plant of the forest floor, and thus grows well in moist, shady situations, sometimes with moss. Unlike many plants, it doesn't seem to care what kinds of rocks it grows upon, or what kind of trees it grows under. In the Chicago area it is the first sedum to bloom in spring, usually by the end of April.

*Sedum dasyphyllum* and relatives

These are very low-growing species or varieties of the *S. album* complex that come in many interesting pale vegetative forms, although they all have the characteristic small, white or pinkish blossoms that give the group its name. Among those we have tried with varying results are: *Sedum dasyphyllum* var. *glanduliferum*, *S. dasyphyllum* var. *rifanum*, 'Opaline', and *Sedum quinquefarium* (sometimes considered a subspecies of *S. dasyphyllum*, or see *S. dasyphyllum* var. *macrophyllum*). There is also a very attractive related species called *Sedum brevifolium* which we tried but were never able to maintain successfully.



*Sedum populifolium* (photo, p. 181)

This is an interesting sedum with many unusual features. It is the only woody sedum not native to Mexico. It has a unique, bushy, contorted outline. And although it clearly belongs to the genus *Sedum*, it was generally assumed to have no close relatives. Several authorities believe it is dying out in the wild. Finally, it has unusually attractive leaves, flat and shaped like a poplar leaf as the name implies, and its flowers are said to be scented (although I must confess that I have sniffed at many and never detected an odor). Originally from the steppes of Siberia, it grows well in our gardens, but it only flowers for us when grown in shade. Since seeds are rarely available, it is best propagated by stem cuttings.

*Sedum sieboldii*

Just as *S. ternatum* begins the season for blooming sedums, *S. sieboldii* closes the summer, putting forth clusters of very attractive pink flowers long after less hardy plants have given up; the blooms persist until blasted by a hard frost, usually in late October or early November. It is a low, gracefully arching plant with gray-green, dusty, round leaves, each with a tasteful maroon border. There is also a terrific cultivar, often sold as 'Variegatum', that adds a cream-colored splash in the center of each leaf. It is definitely worth trying, even though we have found it to be slightly less hardy than the type. Incidentally, Stephenson also recommends *S. sieboldii* as a worthy house plant that grows somewhat differently under indoor conditions.

The Westerners: *Sedum laxum* and *Sedum spathulifolium*

*Sedum laxum* of northern California and southern Oregon, and *Sedum spathulifolium* of the Pacific Coast ranges and the west side of Cascades north into British Columbia, constitute a series of exceptionally beautiful western American species that many rock gardeners, perhaps most, grow with excellent results. Unfortunately, despite many efforts over the years, we have been unable at the Chicago Botanic Garden to grow any of them reliably for more than a season or two. Of course, since we work in an experimental garden, and since our mission is to evaluate plants suitable for Chicago-area gardens, we must have our failures. If we did not, we would merely be operating a demonstration garden—at least that is what I tell myself each spring. Nevertheless, I would like to urge rock gardeners in the borderline areas where the westerners are doubtfully hardy to try to select the hardiest of these plants and to develop and publicize some techniques for keeping them alive. Among those in particular that have broken our hearts in past seasons are *S. laxum* ssp. *laxum*, *S. laxum* ssp. *obtusatum*, *S. spathulifolium* ssp. *pruinatum* var. *purpureum* 'Cape Blanco' (photo, p. 181), and *S. spathulifolium* ssp. *pruinatum*. As a challenge, we still occasionally try to grow a few so-called tender plants, and once we were able to keep a clone of *S. lineare* 'Variegatum' alive for three years, until northerly winds finally did it in.

The Biennials: *Sedum pilosum* and *Sedum sempervivoides*

Just to balance the foregoing list of some perennial sedums that I believe every rock gardener should grow, let me mention just two additional biennial species that we have often carried through the two-year cycle but have never been able to maintain beyond that time. In itself growing these species from seed each year is certainly a rewarding activity, but it does not meet the strictest crite-



ria for successfully establishing a plant in the garden. I therefore cannot recommend the biennials to *every* rock gardener, but only to those who can make a commitment to maintain the plants until such time as they may self-sow.

The first is *S. pilosum*, which for its first year resembles a small, hairy sempervivum about 1" in diameter and in the second year produces abundant clusters of gorgeous, light pink-violet flowers (photo, p. 181).

The other is *S. sempervivoides*, which in the first year produces a very hairy rosette that may be as much as 4" across, and in the second year produces clusters of almost indescribably brilliant scarlet flowers. Both species need excellent drainage and, in our climate, the shelter of some nearby rocks.

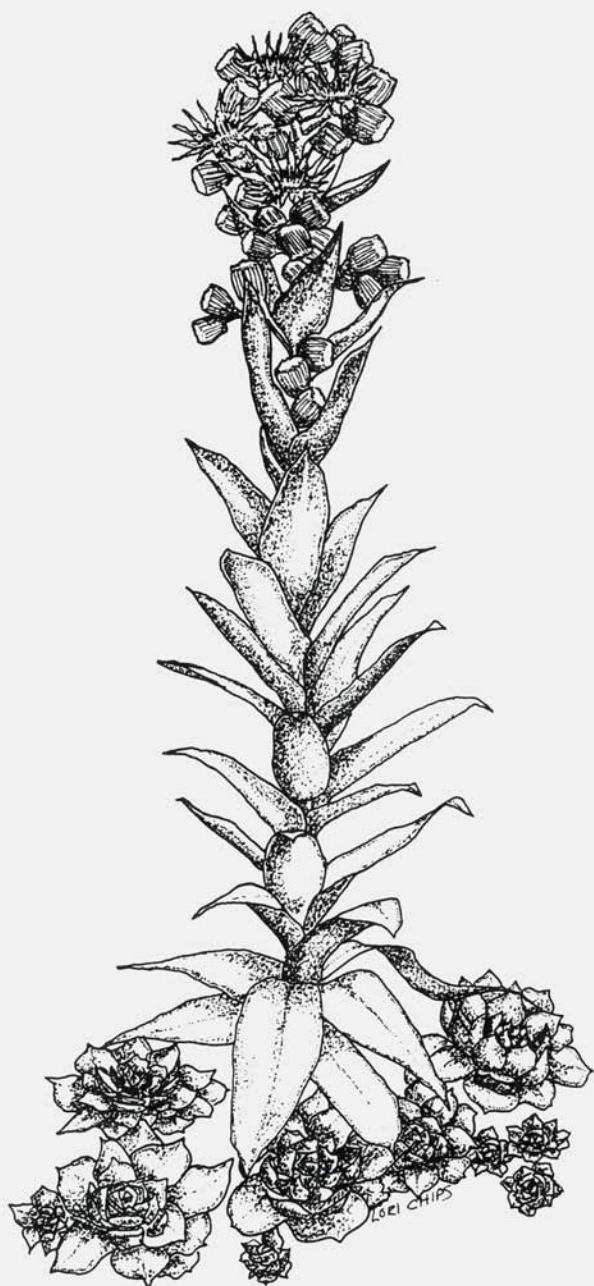
#### The Annuals: *Sedum caeruleum* and *Sedum nuttallianum*

Finally, let us mention just two annual species that no rock gardeners should try to add permanently to their gardens unless they are prepared to take on a challenge with an excellent chance for disappointment and frustration. Make no mistake: if one can just get the seeds, it is easy for almost anyone to grow either taxon for a single year. I have done it myself more than once. The trick is to induce these plants to self-sow year after year. I have never managed even to come close. True, I have known gardeners who claimed to have done this, but I noticed that they tended to become more reticent about their tales of success as the years went by. If any readers are actually keeping the annual sedums going in the garden, my hat is off to them, and I would urge them to share their knowledge (and their spare seeds) with poor souls like myself.

*Sedum caeruleum* is by far the better known of the two species, and its seeds are sometimes available. Stephenson says that it once was a common annual in gardens, but seeds are now difficult to obtain. The prestigious seed firm of Thompson and Morgan made an earnest effort several years ago to provide *S. caeruleum* seeds but, so far as I know, never repeated the offer. Occasionally, seeds have been available through the NARGS Seed Exchange, and Helen Payne at one time offered seedlings. No source offers seeds consistently. If you do manage to get seed, germination will most likely be easy, provided the soil is left undisturbed. The results are spectacular. This is the only blue-flowered sedum, its numerous blossoms a heavenly color. Curiously, unlike other sedums, this tends to have seven to nine petals, instead of the usual five. The foliage in bright sun is luminescent red. *Sedum caeruleum* is native to the shores of the Mediterranean Sea, so we may hope to grow it again someday.

*Sedum nuttallianum* is a small, weak, variable plant with yellow blossoms. It is so interesting that it deserves an entire article to itself. Micky Crozier of Kansas, who with great difficulty collected its seeds in the field and distributed them to enthusiasts all over the world, wrote just such an article in 1991 for the *Sedum Society Newsletter* (16:17). The plant is native to the southern and western parts of the Ozark Plateau and is said to be a common weed in some areas. Unfortunately, I have no information on how to get seeds at this time, but I can state from experience that the blue *S. caeruleum* in bloom next to the yellow *S. nuttallianum* is unforgettable. I saw it once; I hope others will see it in the future.

David Heller gardens in Highland Park, Illinois. His interest in sedums dates back 25 years. It is not true, as some of his friends insist, that he is a "sedumaniac."



*Sempervivum tectorum*

# SEMPERVIVUMS!

## DO WE GIVE THEM A FAIR CHANCE?

by Rex Murfitt

Most alpine gardens have a few sempervivums in the odd corner, but this group of true mountain plants is seldom given the attention it warrants. Too often judgment of the entire genus is made on the basis of a few relic varieties inherited with the garden or from the fat, grossly overfed kinds found at sales and some garden centers. Based upon these unfortunate plants, it is no wonder that gardeners are not enthused. The large, predominantly green rosettes, with their dominant flower stems bearing the most dull-colored flowers certainly do nothing to promote the rest of the family. Their reputed ease of cultivation actually also works against them, as they are considered an insufficient challenge.

Tough, easy-to-grow varieties of *Sempervivum* thrive on the poorest of sites, although it is true they are not as attractive here as they might be under better conditions. But the choice species will not stand such abuse and often fade away when treated by the gardener with a cavalier attitude. After all, they are true "children of the hills," as Reginald Farrer describes mountain plants. They have, I believe, the technical disadvantage of being

members of the Crassulaceae, which as we know consists largely of succulent plants. This family alliance in itself implies to some gardeners with a dangerously small amount of information that they should condemn sempervivums to an existence on barren, sun-drenched sites with practically no soil depth.

Visitors—let me hasten to say, some visitors!—may walk past my collection of choice sempervivums, imported from England, with a offhand comment, "Oh, succulents..." Faint praise is this indeed for one of the most valuable groups of plants for the rock garden! Sempervivums are versatile; excellent in the open rock garden or wall; good trough and pot plants; fun to grow in tufa; and they make fine show plants. If grown in a normal alpine soil mixture, in a sunny rock garden, or in crevices, in almost any location where they are not expected to tolerate rich soil, wet soil, or heavy shade, they will prove to be reliable rock garden plants.

I am not going to go so far as to tell you that sempervivums all have beautiful flowers, although many gardeners do find them handsome. I must



confess that it is the myriad colors and shapes of the rosettes and the manner in which the offsets are produced—like chicks around the mother hen—that appeals to me.

Take *S. arachnoideum*. I am sure that every rock gardener knows or has a plant or two of this lovely little rock plant (photos, pp. 186–7). It is easily recognized by the hairs that thread from leaf tip to leaf tip and become so dense that their whiteness shines. Shade causes the rosettes to open up, so stretching the hairs, and the plant loses this attractive feature. This species has the finest flowers of the genus, bright pink, open, star-shaped, and short-scaped. It flowers in July. The leaves that comprise the rosettes may be any or several shades of red and purple. There is a charming, white-flowered form as well and a few named varieties well worth collecting; some are hard to find. The plant remains neat, tidy, and compact, all features that make any alpine plant so appealing.

Should a reader wish to pursue sempervivums a little further, I offer this short list of species and varieties he may wish to consider: *S. andreanum*, from N. Spain; *S. ballsii*, of Greece; *S. cilosum* and its forms, origins in the Balkans; *S. dolomiticum*, of the eastern Alps; *S. erythraeum*, from Bulgaria; *S. octopodes*, of Macedonia; *S. pumilum*, from the Caucasus; *S. tectorum* 'Mrs. Giuseppi' and 'Sunset', of cultivation.

As you are checking through the reference books you will encounter the name *Jovibarba*. Until recently species described in this genus were included within *Sempervivum*. Botanical reclassification has placed them within their own genus. Plants in this group have yellow, bell-shaped flowers. The species *J. heuffelii* has several varieties and hybrids that are worthy of your collection (photos, p. 188).

An important management operation may be performed the moment the flowers begin to fade. The old flower stems must be removed, because the rosettes from which they have been produced will die. Pulling these by hand does not always work, as many of the young rosettes may come up with the flower stem. Try placing your hand flat on the plant and pulling the stem through between the fingers. You may find that after this operation the plant looks very untidy. There are two choices for amelioration. Dig up the whole plant, divide it, renovate the soil, and replant the best rosettes. At this time of year recovery is rapid. Or you may choose to leave the plant in place and topdress the vacant spaces with some light soil, allowing the young rosettes to grow into the spaces naturally.

Sempervivums, particularly those in pots and protected by cold frames, are susceptible to attacks by root weevils. The eggs are laid in the growing season, and the larvae develop in the soil through the winter. They will tunnel up the thick, fleshy roots right up into the rosette. The sure way to detect their presence is to check regularly by gently pulling on the rosettes. If they lift easily from the soil, there are weevils present. The pots must be emptied, all larvae removed, and the plants replanted in fresh soil. There seems to be no pesticide available in Canada that will kill these weevils in the soil.

For some reason, ants are attracted to sempervivum plants, especially of course to your finest specimens. Most likely it is not so much the plant as the nice warm, dry position it occupies. Ants love to nest beneath a plant, and often their underground efforts spoil the symmetry of the plant. Effective ant poisons tend to be strong, and include Diazinon. Try a mix of half borax, half powdered sugar, the borax to desiccate,

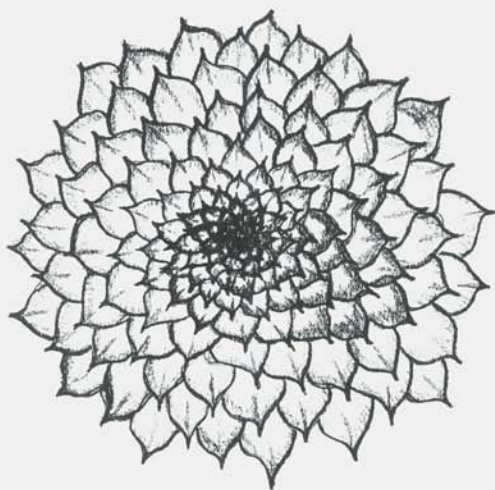


the sugar to seduce, if the high-tech poisons are too much for you.

A final word. Sometime in the early 1940s a hybrid sempervivum was found in the garden of the Earl of Morton in the County of Surrey, England. It was believed to be a cross between *S. tectorum* 'Giganteum' and *S. 'Ornatum'*, itself a hybrid. The plant, then named *Sempervivum* x 'Commander Hay', produces rosettes 9" across and flower stems measuring some 17" in height and is capable of carrying 700 flowers. I had this plant many years ago. It was quite a fun plant, lending itself to cultural modifications that enable the production of

extra-large, single rosettes. Imagine taking a giant rosette to the local alpine show! Is anyone on this continent growing the true plant today? If so, I would enjoy hearing about it—all right, I admit I'd love to have a rosette!

Rex Murfitt has been growing sempervivums all his life, never excluding them, even though he has grown (and shown) many alpines considered by some to be more dignified. He gardens in Victoria, British Columbia. Rex is currently writing a book on troughs, in collaboration with Joyce Fingerut.



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### *A Few Unconventional Applications for Sempervivums*

#### CARPET

When I first joined the American Rock Garden Society in 1976, I began to travel with Dorothy Custer and her husband and friends to Milwaukee and Chicago to attend meetings of the Wisconsin-Illinois Chapter. Among the delightful gardens we visited was that of Mrs. Riebow in Milwaukee. Her entire small yard was carpeted with sempervivums, adorned by rosebushes. There were hundreds of cultivars of sempervivums, each with the name properly attached. The carpet was complete, wall-to-wall sempervivums, and the garden-

er achieved a marvelous effect of color and texture. Nor were there any weeds. If you were entranced with a particular cultivar, you could purchase a rosette or two for a dollar or so. Mrs. Riebow sent the money to her favorite evangelistic Christian charity. A few people wouldn't buy, but in any case it was a wonderful, personal, creative garden and a marvelous resource.

When I moved to Denver some years later, I tried to emulate Mrs. Riebow's effect, planting perhaps 20 species and cultivars cheek-by-jowl in a little valley in my rock berm—"a river of semps," I called it. I like this treatment very much, as one can present the variation in the group in a small area. The river is most glorious in the bright spring color of the growing foliage but remains attractive year-round—and ever so easy.

#### WALL PLANT

Our new house (I wonder how long we will call it "new"? It has been three years already.) came with a 30'-long, 4'-high flagstone wall and a curving stair of flag. The soil behind the wall is sand, not sandy loam, just sand. In the wall of the stairwell was a medallion a foot across of some large, green sempervivum. We watered and fed the garden above the wall, and the single plant of sempervivum now measures 36" by 34". This spectacle draws as much admiration from the general garden visitor as any plant in the garden. (I didn't say *rock* gardeners admired it; *they* cluck.) Just for fun I have added a few more noble cultivars of hens-and-chicks here and there in the wall. I haven't decided whether to keep the wall forever, but in the meantime the semps are fun. One thing about them, one needn't worry that they won't transplant.

#### CREVICE PLUG

What other plant is so useful as the humble sempervivum for plugging a crevice that just won't hold soil? When Josef Halda and other worthy Czechs began staying with us in the late '80s, they built crevice gardens and incited me to build ever higher, steeper berms. And they taught me a plugging technique. Stuff the crevice with soil insofar as possible, then smush a big clump of sempervivums in the spot most likely to collapse. To insure stability, bend a coat hanger wire (or whatever you have handy) to a hairpin shape and insert it horizontally over the semp, so that the wires go deep into the crevice and the semp is pinned in place. The sempervivum will grow and root itself in, and you can grow something choice in the crevice above.

#### TROUGHS

Troughs aren't only for difficult and fussy plants! A trough of seven or eight sempervivum cultivars makes a marvelous and novel present for anyone at all interested in gardening. The plants fill in over a single summer if planted in May, when they are in full growth. They are interesting at all times of the year, provide an opportunity for garden conversation—you will be asked a hundred times if they are cactus—and should one become tired of such a gift, one can always pass it on.

—Gwen Kelaidis



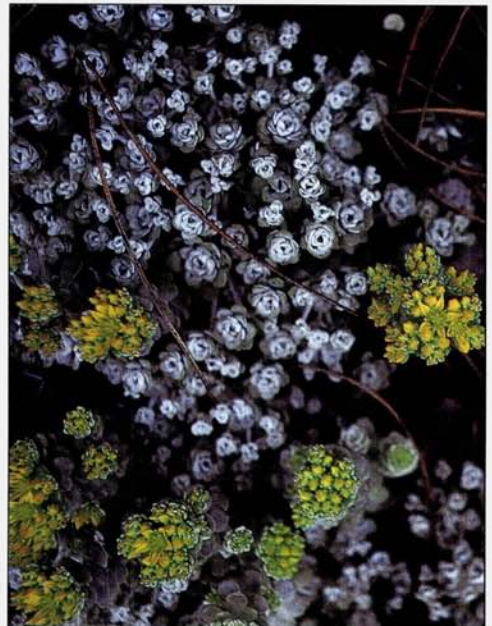


*Sedum pilosum* (p. 175)

Ted Cochrane

*Sedum populifolium* (p. 173)  
L. von Allmen

*Sedum spathulifolium* 'Cape Blanco' (p. 174)  
C. Keibler







Pullman Evaluation Garden, Chicago Botanic Gardens

C. Provost

*Sedum middendorffianum* var. *diffusum* (p. 172)

Richard Hawke







*Sedum ternatum* 'Shale Barrens' (p. 173)

*Sedum spurium* 'Tricolor' (p. 173)

photos, Richard Hawke







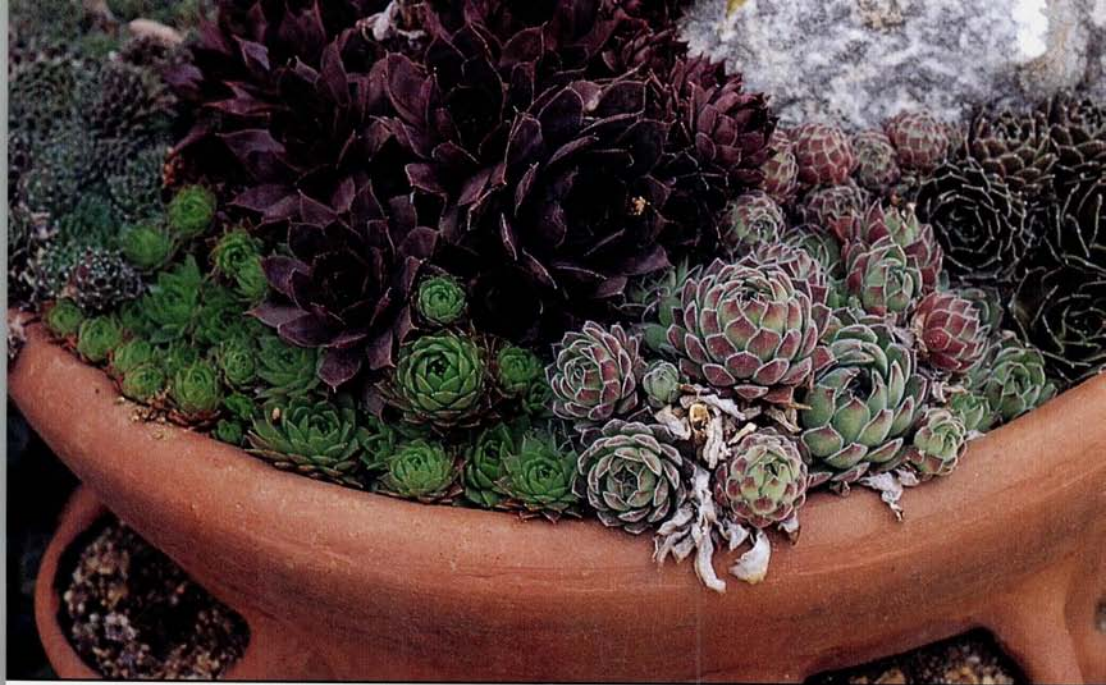
*Maihuenia patagonica* (pp. 209–210)

*Maihuenia patagonica* near Mendoza

photos, Rod Haenni

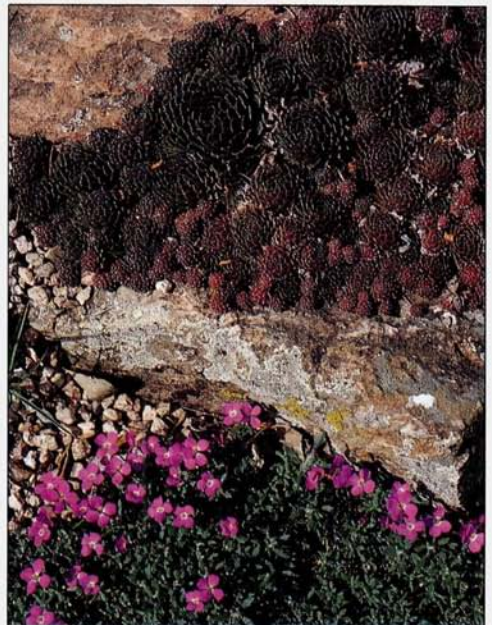






Trough with *Sempervivum* 'Sparkle', 'Mali Hat' (red), 'Chumba Petzii' (light green), 'Housemen' (pale), 'Fair Lady'  
Photos, Dick Bartlett

### Sempervivums in rocks







'Bella Donna'



*Sempervivum arachnoideum* 'Rubrum'



'Ohio Burgundy'



'Jungle Shadows'



186 'Mayfair Hybrid'



'Icicle'

photos, Bill Adams





'Hayling'



'Gloriosum'



*Jovibarba allionii*



*Jovibarba arenaria* from Murtal

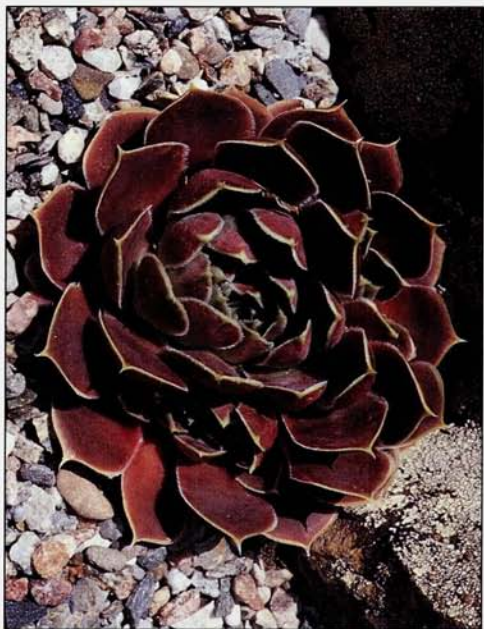


'Rubicon Improved'

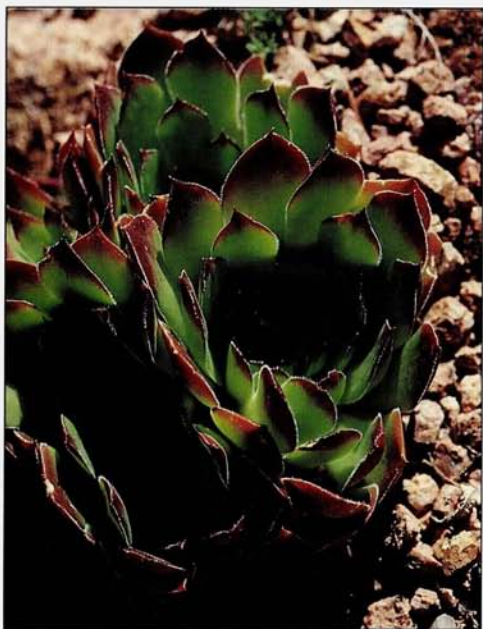


*Sempervivum arachnoideum* from Abruzzi



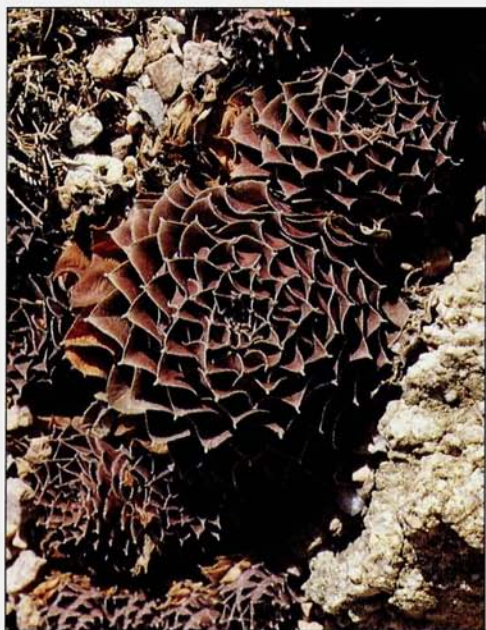


*Jovibarba heuffelii* 'Bronze Ingot' (p. 192)  
Bill Adams



*Jovibarba heuffelii* (pp. 178, 191-2)  
Panayoti Kelaidis

*Sempervivum* sp. Panayoti Kelaidis



*Maihuenia poeppigii* (pp. 209-210) Bill Adams



# SEMPERVIVUMS:

## LIVE LONG AND PROSPER

by Bill Adams

For me, succulent plants have always been very interesting. In my early gardening years I became fascinated with cacti and, with the help of numerous mail order nurseries, I had soon filled all available windowsills with a varied assortment of plants that grew and flowered with marginal success. It became immediately obvious that a windowsill was not the optimal place to grow succulents, so I began to concentrate my efforts outside.

In general, I found myself interested in small, compact plants, and a trip to the rock-alpine garden at the Denver Botanic Gardens was the turning point in my gardening career. I was destined to be a rock gardener, and the never-ending search for rock garden plants began.

Since childhood I had known about sempervivums. They were always referred to as hens-and-chicks and were usually planted in hot, inhospitable places where nothing else would grow. Most of the plants that I had seen were the same—common, green, and uninteresting. I had no idea of the extraordinary variety of sempervivums available until I ordered my first catalog—page after page of

species and named cultivars colorfully described and just waiting to be delivered to my garden. I was hooked!

I started to do research on sempervivums and found they had a very colorful history. The word *sempervivum* comes from the Latin *semper* (always) and *vivum* (live), which gives rise to one of the common names for these plants—live-for-evers. Sempervivums have been in cultivation for a very long time and had their place in German and Scandinavian mythology, where they were called Thor's Helper and were planted on roofs to protect the home from demons. In addition, the plants served several practical purposes by helping to hold the thatch together, providing insulation, and shielding the thatch from the rain. Another of the common names, houseleeks, may refer to the ability of sempervivums to stop leaks, although the spelling would suggest some strange connection with onions. The Romans called them *joubarbe* (beard of Jupiter) and planted them on roofs to protect against lightning. In modern times, planting has, in most cases, moved from the roof to the garden, and I am sure they must provide some protec-



tive function there that has yet to be identified!

All this talk about growing sempervivums on roofs leads to one inescapable cultivational conclusion—if you can grow them on a roof, normally not a choice gardening location, these plants must be really easy to grow! True, but to grow sempervivums well is a little more difficult. To show their best color and form in our bright southwestern climate, sempervivums should be planted in filtered shade or on an east-facing slope or wall. If they are sited where the light is too bright and hot, the rosettes close up and the colors bleach out. The plants aren't dead, they just look like it. Since light intensity varies in different localities, a little experimentation will be necessary to find just the right exposure for your garden.

Sempervivums are not particular about soil type, as long as it is well drained. However, you may experience changes in growth when different types of soil are used. As expected, leaner soil produces less lush growth and more attractive foliage color. Based on some of the pictures I have seen, I speculate that soil pH may have some effect on the colors produced, but I have no practical experience in this area. It is possible, however, that it is only the photographs that appear distinct from my plants and not the plants themselves.

Propagation of sempervivums is generally not difficult and in most cases occurs without any willful intent on behalf of the grower. As each rosette reaches adulthood, it begins to produce chicks—small replicas of itself tied to the mother plant by the herbaceous equivalent of the umbilical cord, a stolon. Another independent plant is born when the stolon is severed and the young chick, often already rooted, breaks its link with the mother rosette

and begins life on its own. This method of propagation produces an exact replica or clone (a sensitive word nowadays) of the original plant. Only *Jovibarba heuffelii* provide a challenge in cultivation, since it does not produce chicks. Sempervivums do produce seed, and new plants can be raised from that seed. However, the plants produced are in most cases inferior to the parents and, unless you have an irresistible urge to parent, seed propagation is best left to the hybridizers.

Although *Sempervivum* means live-for-ever, this name applies only collectively, not individually. Sempervivums are monocarpic, and each rosette lives only until it flowers; then it promptly dies. Fortunately, the deceased mother leaves behind a large family to continue the existence of the colony. Unfortunately, when the flowering rosette dies there is an empty space that remains, and this detracts from the appearance of the mat. I choose to give priority to the appearance of the mat and, therefore, appreciate cultivars or species that are shy to flower or have small rosettes that produce minimal damage when the flowering rosette dies.

There are two distinct groups of sempervivums: the tender species from Africa and the Canary Islands, and the hardy, alpine species from the Old World. It is from the hardy Old World species that all of the beautiful hybrids we enjoy today have been derived. There are five general types of sempervivums: the tectorums, the arachnoideums, the fringed and tufted varieties, the jovibarbas, and the *Jovibarba heuffelii*. Each has its own unique character and presence in the garden.

The tectorums (from the Latin *tectum*, meaning roof) are the group most familiar to gardeners. They have

smooth to slightly hairy, strap-like leaves and vary in size from rosettes as large as 8" or 9" to small, compact rosettes that seldom exceed a half-inch in diameter. One of my favorites is a hybrid known as 'Gloriosum'. It produces many medium-sized rosettes of red and green, with the red increasing in predominance toward the center of the rosette; in summer, the color changes to an orange-red. This hybrid seldom flowers and will form spectacular mats.

A number of the tectorums (photos, pp. 186-7) have leaves that are covered with many small hairs and appear as if covered with velvet. Two of the best are 'Bella Donna', with rosy-gray, velvety leaves, and 'Ohio Burgundy', which forms large rosettes of deep burgundy.

Of the smooth-leaved hybrids, special mention should be made of 'Ornatum'. When in prime color, the medium-sized rosettes looks much like roses with petals that are red at the base and dark lime-green at the tips—a spectacular combination. For a different look, a good choice is 'Jungle Shadows', with rosettes of narrow, dark burgundy leaves that resemble a waterlily. One of the most unusual of the sempervivums is a cultivar known as 'Oddity', a mutation of *S. albidum*. Each leaf forms a hollow green tube with a purple-tinged opening at the tip.

The arachnoideums or cobweb houseleeks make excellent rock garden subjects (photos, pp. 186-7). As their common name suggests, the rosettes are covered with hairs that resemble cobwebs, and the web is concentrated in the center of the rosette, producing a mat with a distinctive polka dot appearance. In general, the arachnoideums can tolerate more sun, but too much light causes them to fade, and too little produces lax rosettes with poor webbing. Of the numerous

cultivars and hybrids available, my personal favorite is *S. arachnoideum* 'Rubrum', a miniature that quickly forms spectacular mounds of heavily webbed rosettes that in spring are flushed red on the outside edges. The most heavily webbed is *S. arachnoideum* 'Yukon Snow'. The rosettes are large and are so heavily webbed that they appear to be a mound of white balls. For those who like a less compact rosette with lighter webbing, *S. arachnoideum* 'Stansfieldii' is particularly attractive, with medium-sized, red-flushed rosettes that contrast nicely with the white cobwebs.

The fringed and tufted sempervivums are another fascinating group with a very unique look. The leaves are relatively small and are covered with hairs that make them appear fuzzy. Some, like the hybrid 'Mayfair Hybrid', reproduce extremely rapidly and form extensive mats. In my experience, 'Icicle' is one of the most spectacular sempervivums when in peak spring color. The leaves are deep burgundy-red and heavily fringed and tufted with white hairs. However, the most unique characteristic of this *Sempervivum* is demonstrated when drops of water fall on the rosettes. The drops are suspended by the hairs that cover the leaf, and the color of the leaf is reflected from the leaf surface through the water, giving the illusion that drops of clear red liquid have been dropped on the leaves. It is truly magical.

When gardeners talk about "rollers," they are not referring to their latest trip to the beauty shop but are actually discussing a sempervivum-like genus of plants known as *Jovibarba*. The *jovibarbas*, with the exception of the species *J. heuffelii*, produce compact, globular rosettes of small leaves (photos, p. 187-8). Chicks are produced on the top and sides of

the rosette, attached to the mother plant by a thin stolon. As the chick grows, the stolon eventually breaks, and the chick rolls onto the ground. At the point of contact with the ground, roots form and a new colony begins to grow.

Jovibarbas are all quite similar in form, with colors from solid greens to combinations of red and green. The most commonly encountered is *J. allionii*, which rapidly grows into an extensive colony of apple-green rosettes. *Jovibarba hirta* and its cultivars are similar but have more red and purple coloration. *Jovibarba hirta* from Smeryouka has very red chicks which contrast nicely with the greener adult hen rosettes.

All of the plants discussed up to this point have increased by producing chicks attached to the mother by a stolon. The *Jovibarba heuffelii* are different. The rosettes are all attached to a thick root stalk, and new rosettes form by budding from the center of an existing one. Growth is generally slower than in the other sempervivums, and propagation is more challenging. Instead of simply removing a chick and planting it, *J. heuffelii* must be cut into pieces. After the rosettes have been cut apart, the wounds should be

allowed to heal for a few days before planting.

I have seldom been able to obtain *Jovibarba heuffelii* in local garden centers, but there are a number of specialty mail order nurseries that offer a good selection of both species and hybrids. Of the hybrids available, "Bronze Ingot" (photo, p. 188) has performed the best for me. The leaves are a deep bronze-purple with light green edges that are covered with stiff hairs. "Torrid Zone" is also quite nice, with copper-red leaves and edges fringed with tiny hairs. The miniature of the group, aptly named "Minutum", slowly forms mounds of 1"-broad, light green rosettes with purple tips. There are a number of attractive species available, but they are not as colorful as the hybrids.

In the last mail order catalog I received, there were over 400 *Sempervivum* and *Jovibarba* cultivars and species listed, and the number continues to grow as hybridizers continue to introduce new and exciting plants to the market. For every gardener, there are a few on the list that will make rewarding additions to the garden, and hopefully this article will encourage you to look further into this marvelous group of plants.

#### Sources for Sempervivums

Squaw Mountain Gardens  
36212 SE Squaw Mountain Road  
Estacada, Oregon 97023

Bill Adams gardens with his wife, Karen, in Pueblo, Colorado.



# SWEET AND SUCCULENT

## SOUTH AFRICAN

### MESEMBRYANTHEMACEAE

by Panayoti Kelaidis

**Y**ou can expect to find a few succulents in even the most refined rock garden, including sempervivums, of course (Reginald Farrer praised them so warmly, after all), and a few sedums (the fussy ones). Lewisias, their succulence and membership in the Portulacaceae notwithstanding, are even considered choice in most gardens. But members of the Mesembryanthemaceae? What to make of those endlessly variable plants, restricted largely to South Africa? They produce such incredibly garish displays of the most shocking colors. Their foliage runs the gamut from vaguely mimicking stones to plush carpet to near plastic to positively lizardy. A few have the gall to be alpine; most originate in deserts, for Heaven's sake, where frost rarely occurs. No wonder these plants are for all intents and purposes absent from books on alpines. How can we take a family seriously when neither Sampson Clay nor Reginald Farrer made mention of it!

Yes, surely there must be something amiss with these plants, because precious few are found in rock garden collections and even fewer in gardens outside California, the Riviera, or Africa. Perhaps they are too easily grown? It is true there are a preponderance of accommodating plants in the family that quickly grow from seed to maturity and bloom with profligate abandon for the rankest amateur. Experts can hardly be blamed for shunning them.

There is another terrible flaw in this family of interesting, nay even showy plants: there are simply too many kinds. Where can one begin? How can one master them all? Some like it moist in summer, others moist in winter. Some thrive out-of-doors in cold, dry climates, while most are genuine subtropicals that perish in wet winters or extreme climates. If you have tried to identify a mystery ice plant, you no doubt have found yourself looking through the endless pages of Herman Jacobsen's *Handbook of Succulents*, marveling that there could be so many kinds of anything on earth.

The family has generally been designated in the minds of rock gardeners as the special province of succulent fanciers. But mesembs are invariably plants of rocky habitats. A good many thrive on the high ridges of the Komsberg, Roggeveld, and Nieuwveld Mountains of the Great Karroo, the arid, inland part of South Africa, where snow and frost occur for many months of the winter.

Once you have seen them on the high alpine summits of the Drakensberg, growing up through mats of *Helichrysum*, with delicate, alpine *Gladiolus* and orchids waving in the breeze nearby, you may not be so quick to exclude this family from the rock garden.

### *Aloinopsis*

One of the first genera of mesembs to provide hardy members in the Denver area, *Aloinopsis* is largely limited to the coldest parts of the Great Karroo. Paul Heiple, a succulent lover in Denver, was the first person to plant out *A. spathulata* in my area. This is surely one of the most stunning plants one can grow in a temperate garden.

#### *Aloinopsis malherbei* (photo, p. 200)

It is a pity that the very first species to launch this treatment is only hardy two winters out of three in Denver. But people in Salt Lake City, Albuquerque, or warmer climes will be delighted to have this astonishing plant, with coarse rosettes covered with the most amazing, fabric-like texture and shiny exudations of white crystals along the edges of the leaves. The flowers are quite large, up to 2" across, a deep orangy color, sometimes tinged with pink. I ran across this once in the Roggeveld Mountains in rocky ground with only tips of the leaves exposed above ground.

#### *Aloinopsis orpenii*

This species quickly forms dense mounds of wedge-shaped leaves with stemless yellow daises in the early spring. It is very dramatic and has been hardy through rather wet, cold winters in Denver. The brash yellow flowers take on reddish tones as they age.

#### *Aloinopsis peersii* (photo, p. 197)

The 2-3"-long, spoon-shaped leaves of a fine, velvety texture are attractive in their own right. In mid to late spring a succession of yellow-orange flowers are produced in the center of the lax rosettes. The flowers are over an inch across. This makes a very dramatic specimen for a dry crevice in a sunny garden.

#### *Aloinopsis spathulata* (photo, p. 199)

The flowers are nearly an inch across and of the brightest baby pink. The leaves are a flattened wedge shape, and of a cold, primeval gray, suggesting a pachyderm more than a plant. The stemless flowers are produced any time from late February to April, depending on the site and season. They open only in bright sunlight, usually just after noon. This species requires perfect drainage and full sun and doesn't care to be waterlogged at any time of the year. In the right spot it has persisted in Colorado gardens for numerous years, forming a massive tap root. Endemic to the higher reaches of the Roggeveld Mountains, I remember finding this with the tips of its leaves barely showing in the dry, dusty, clay roadside near Middelpos in January.

#### *Aloinopsis thudichumii*

This occurs over much the same range as the previous species, although the habit and flower color is much more like *A. peersii*. It is very hardy and attractive in bloom or foliage.

*Bergeranthus jamesii* (photo, p. 200)

This species has proved to be the hardiest member of a variable genus centered in the East Cape Province. Distributed primarily in the higher elevations, I found it on flat, sandstone pavements in the mountains above Tarkastad, where it was in bloom and seed simultaneously in March 1996. The clumps consist of neatly tapered leaves, hard to distinguish from each other in their dense rosettes. *Bergeranthus jamesii* is a day-bloomer, opening flowers in the late afternoon. They are produced on pedicels 2–3" tall, reddish in bud, opening a soft orange-yellow, aging to near red. The flowers have many petals and can approach 2" in diameter. This species tolerates a wide range of soils, provided they are well drained and never soggy. It starts to bloom in April and sports flowers until October in Colorado.

*Chasmatophyllum musculinum*—Jagged-leaf Ice Plant (photo, p. 197)

A feature of many South African plants that delights the gardener is their long season of bloom. None blooms for a more extended period than this beautiful succulent from the central parts of the country. It produces jagged clumps of army-green leaves that eventually form a loose mat. The brassy yellow flowers start blooming in late April most years and produce repeated flushes until frost. The flowers open in the late afternoon and close early on bright mornings, but the red-stained backs of the petals are attractive even in the closed state. We have some eight collections of *Chasmatophyllum musculinum*, each quite distinct. Several other members of this genus have demonstrated some hardiness, but none approach *C. musculinum* for longevity and tolerance of a wide range of soils and moisture regimes. If you try no others, try this!

*Delosperma*—Hardy Ice Plant

The yellow (*Delosperma nubigenum*) and purple (*D. cooperi*) ice plants have become classics in our area in the last 15 years, notable both for their compact mats of foliage and their showy flowers. A host of distinctive cousins are gradually joining them to make this genus even more desirable in Western gardens for their long season of bloom and their year-round texture.

*Delosperma ashtonii* (photo, p. 198–9)

This is an abundant, tufted species of the highest mountains in South Africa. It makes a lax rosette of gray-green leaves, with 2"-wide, soft pink flowers with a bright white eye. It goes semi-dormant in winter, so do not despair if it is a bit tardy to appear in spring.

*Delosperma cooperi*

This species is widespread in culture in South Africa, especially in the eastern portions of that country. It grows on the Highveld, mostly on the west face of the Drakensberg, where in meadows and on fence lines between Maseru and Bloemfontein I have seen plants indistinguishable from the commonly cultivated form. It is surprising that plants that originate in this area of subtropical climate possess tolerance of winter cold here in USDA zone 5. There are plants very similar to these that apparently grow in the Transkei: Josef Halda collected several accessions there that closely resemble our common *Delosperma cooperi*. But the Halda collections are much condensed in size, have a more attractive winter habit, and, most importantly, are considerably



hardier. The flower color is perhaps a shade more pink. Their only drawback is that these selections do not bloom quite as persistently. This complex has proven to have immense value in conventional landscapes in many areas of the United States. Undoubtedly, with judicious selection and hybridization, an entire industry will develop propagating and marketing this most amazing groundcover from eastern South Africa.

*Delosperma floribundum*

On an expedition near Springfontein in the Orange Free State of South Africa in January of 1994 I collected this compact cousin of *Delosperma cooperi*. It produces a tuft of succulent foliage within weeks of sowing the seed and can come to bloom within two months when sown in late spring. The first summer display may include hundreds of flowers on a single plant. The flowers are 2" across, shimmering lilac-pink with a large white eye that distinguishes the species easily from the better known *D. cooperi*. It is well worth growing wherever that taxon flourishes. Thus far, horticulturists have succeeded with *D. floribundum* in Idaho, New York, Colorado, and California—so it appears to have a very wide range of climatic tolerance. It does best in sites that are not shaded or wet in the winter months and seems to be at least as winter hardy as *D. cooperi*. It is best propagated by seed, which needs warmth and light to germinate. Seed is destroyed by freezing or stratification.

*Delosperma herbeum* (photo, p. 198)

This is a compact succulent limited in nature to a fairly small area in the Karroo. It germinates promptly in warm temperatures and can come into bloom a few months after sowing. It is a more diminutive plant than the previous one with much smaller flowers barely a half-inch across. They are very starchy in effect and pure white in color. This species makes the most impact in a tiny space, a container, or rock garden, where it can well display its dainty charms. It is not reliably hardy where temperatures drop below 0°F.

*Delosperma lavisiae* (photo, p. 199) and *D. obtusum*

Both widely distributed from the foothills to the summits of the Drakensberg Mountains, these two resemble smaller, slightly more shrubby variants on *Delosperma cooperi*. They possess extraordinary winter hardiness, but they do not tolerate long periods both of heat and drought in Colorado without supplemental watering. They are variable in foliage color and flower color, and several selections have been made by Kelly Grummons (owner of Timberline Gardens in the Denver area) and are gaining currency in the Rocky Mountain states.

*Delosperma nubigenum*

The plant grown under this name for the last 15 years undoubtedly represents a triploid or a cross with another species that has resulted in tremendous hybrid vigor. The wild antecedent, which I have now seen in the Black Mountains between Sani Pass and Mokhotlong, on the cliffs below Sani Pass and near the Chain Ladder on Mount-aux-Sources, is a fraction of the size (leaves a quarter-inch long as opposed to well over an inch in the cultivated plant). The wild form has been less tolerant of garden culture, and it does not turn the deep red winter color of the widespread cultivar. It is, however, fertile and much better suited to miniature gardens and troughs.

*Delosperma repens*



*Chasmatophyllum musculinum*  
(p. 195)



*Sphalmanthus resurgens*

*Aloinopsis peersii* (p. 194)

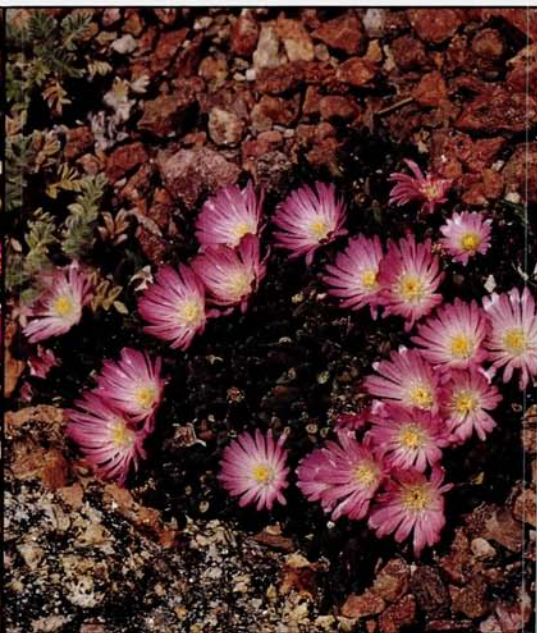
*Rabiea albipuncta* (p. 206)  
photos, Panayoti Kelaidis







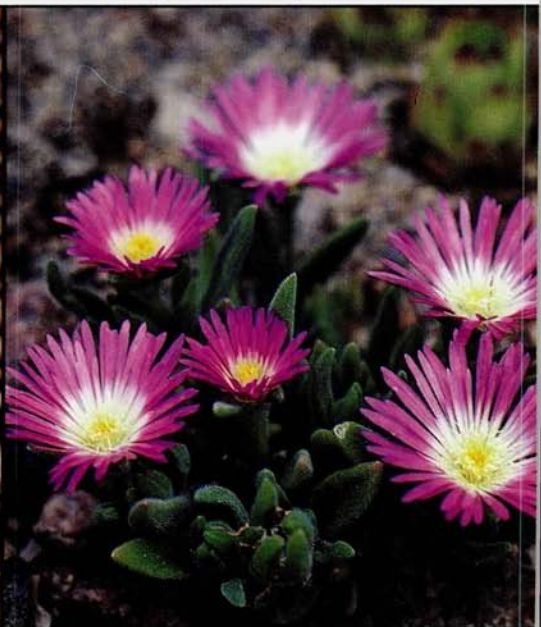
*Ruschia pulvinaris*  
(p. 207)



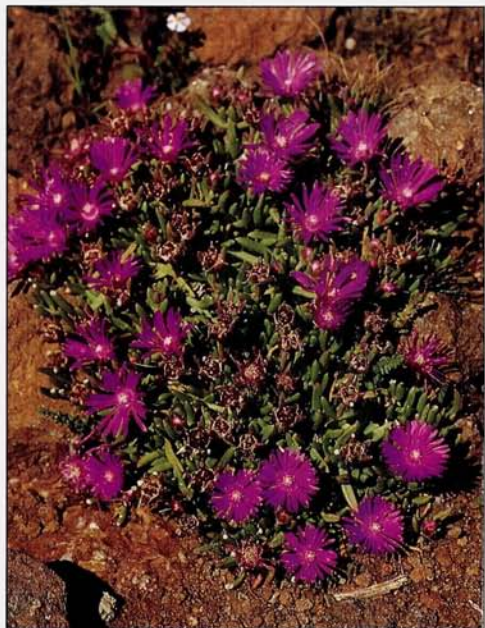
*Delosperma* 'Beaufort West'

*Delosperma herbeum*  
(p. 196)

*Delosperma ashtonii* (p. 195)  
photos, Panayoti Kelaidis







*Delosperma lavisii* (p. 196)



*Aloinopsis spathulata* (p. 194)

*Delosperma ashtonii*, has been distributed as  
*D. sutherlandii*

*Delosperma ashtonii* (p. 195)

Photos, Panayoti Kelaidis

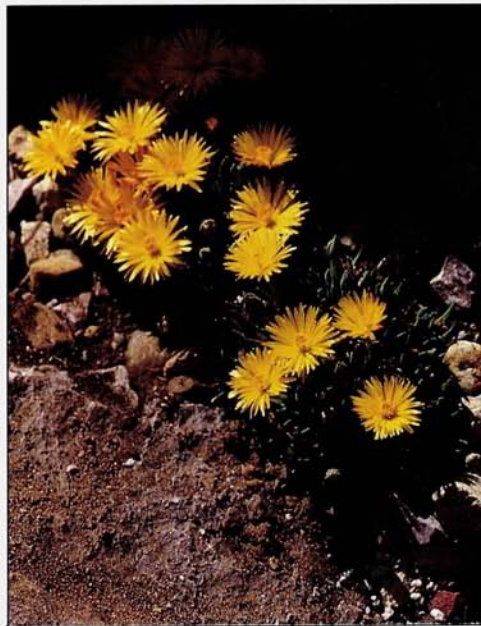
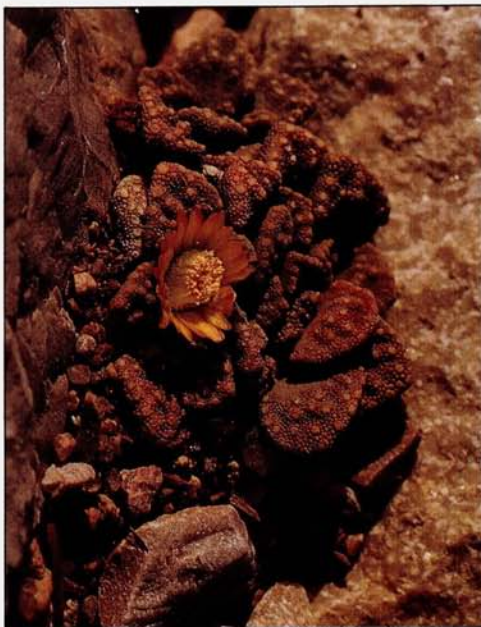






*Delosperma* species (has been incorrectly identified as *D. congestum*)

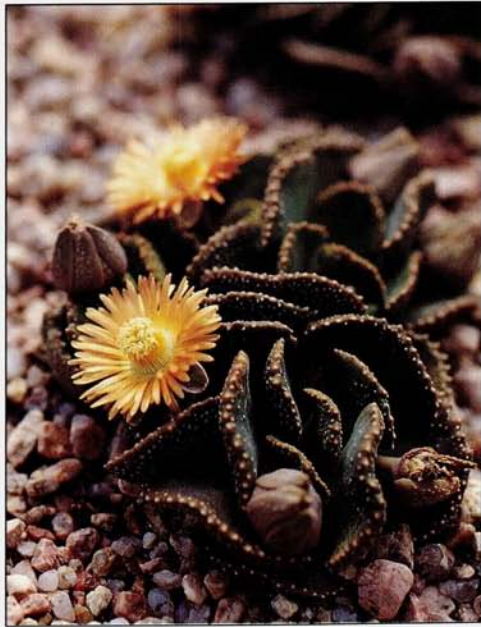
*Titanopsis calcarea* (p. 208)



*Bergeranthus jamesii* (p. 195)

*Aloinopsis malherbei* (p. 194)

Photos, Panayoti Kelaidis

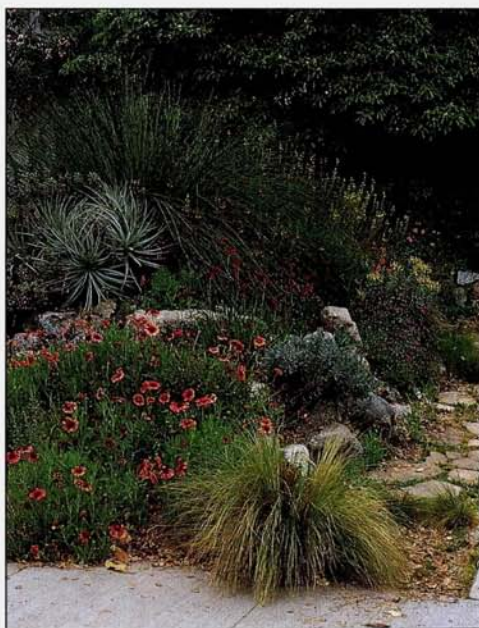






John Trager garden, California (pp. 211–214). BELOW LEFT: *Pelargonium echinatum*, with *Dudleya brittonii*; foreground, *Eschscholtzia californica*; background, *Stipa tenuissima*, *Hunnemannia fumariifolia*. BELOW RIGHT: front to back, *Stipa tenuissima*, *Gaillardia aristata*, *Lavandula angustifolia*, *Anigozanthus*, *Puya venusta*, *Bulbine frutescens* ‘Hallmark’, *Geranium incanum*, *Euphorbia rigida*, *Chondropetalum tectorum*, *Bulbine frutescens*, *Pentas lanceolata*, *Pittosporum undulatum*, *Rosa* ‘Thisbee’.

Photos, John Trager







*Lycoris radiata*, a fall-flowering bulb, with *Dudleya brittonii*

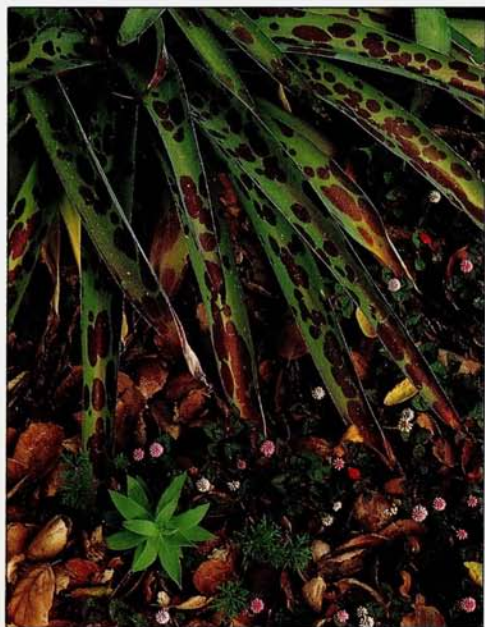


*Bulbine frutescens* 'Hallmark' (p. 212) with *Agave guadalajarana*

*Aloe virens* (p. 213) with *Artemisia* 'Powis Castle', *Viola odorata*, *Ranunculus* hybrid

*Manfreda maculosa* (p. 212) with *Polygonum capitatum*, seedlings of *Euphorbia rigida* and *Geranium incanum*

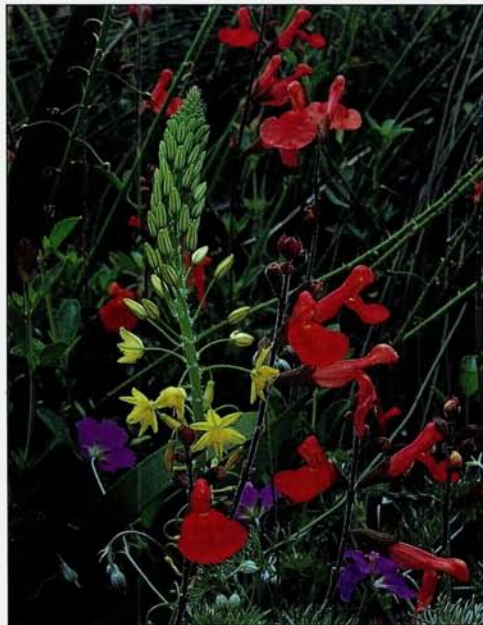
Photos, John Trager







*Aloe dawei* hybrid (p. 213)



*Bulbine frutescens*, with *Salvia greggii*, *Geranium incanum* (p. 212)

*Anigozanthus* 'Harmony' (p. 211)

Photos, John Trager

*Anigozanthus* 'Harmony' with *Agave pelona*,  
*Crassula pubescens* ssp. *radicans*, *Kalanchoe* 'Pink  
Zinfandel', *Borzicactus samaipatanus*







ABOVE: *Geranium incanum*, *Felicia amelloides*, *Bulbine frutescens*, *Lavandula stoechas*, *Chondropetalum tectorum*, *Bulbine frutescens* 'Hallmark', *Artemisia* 'Powis Castle'. BELOW LEFT: center, *Helictotrichon sempervirens* with *Crassula capitella* 'Campfire', *Cotyledon orbiculata*, *Pleiospilos nelii*; foreground, *Limonium perezii*, *Clarkia dudleyana*, *Bulbine frutescens* 'Hallmark', *Aeonium hierrense*, *Yucca endlichiana*, *Scilla hyacinthoides*; background, *Chrysanthemum pacificum*, *Cotoneaster congestus*, *Anigozanthus*, *Salvia greggii* (salmon), *Iris xiphium*, *Artemisia* 'Powis Castle', *Oenothera speciosa*, *Penstemon spectabilis*, *Rosa* 'Thisbee', *Pittosporum undulatum*. BELOW RIGHT: *Salvia greggii* with *Cotoneaster congestus*; foreground, *Geranium incanum*, *Tulipa saxatilis*, *Limonium perezii* and *Crassula capitella* 'Campfire'. Photos, John Trager.



A very tiny species from the eastern Drakensberg *Delosperma repens* bears minuscule leaves stained deep purple and bright rose flowers. It is not the hardiest species.

#### *Delosperma sphalmanthoides*

First described in science from specimens sent to Denver Botanic Gardens by John Lavranos, this beautiful ice plant has proven to be very hardy. It forms a dense mound of blue-gray, tubular leaves that are obscured in April by shocking pink flowers. It so much resembles *Sphalmanthus resurgens* (photo, p.197), another mesemb that survived several Colorado winters, that I distributed plants at first as *Sphalmanthus*, hence the specific name. One of the choicest miniatures in the family, this is restricted to gravelly barrens along the summits of the Komsberg Mountains in the interior of the Cape Province. In nature it grows alongside a wealth of bulbs and other miniature succulents all unknown to general horticulture. It reaches 2" in height and is my wife's favorite mesemb because of its compact bun shape.

In recent years in the Drakensberg several more species of *Delosperma* have been discovered that are distinct and have proven to be extremely attractive in rock gardens.

Sean Hogan and Parker Mache-Sanderson found a tiny, purple-black-leaved, rosetted miniature on rock pavements on Sani Top. This compact dandy has white flowers a quarter-inch or less across, blooming in late spring. It retains its dramatic color in sunny spots.

Nearby in the meadows one can occasionally find a tiny, clump-forming *Delosperma* with stunning, yellow, spring flowers with white eyes: this was mistakenly identified and distributed as *D. congestum*. Originating as it does in wet, alpine meadows, it has extraordinary hardiness, thriving as far north as Calgary and also on the eastern American seaboard. It has produced some white-flowered sports that are outstanding. It is easily propagated from seed or from cuttings.

#### *Drosanthemum*

These are glistening-leaved subshrubs concentrated across the Karroo in the Cape Province. Most are rather large and tender. Two species have shown surprising hardiness and have been grown in gardens for some time. *Drosanthemum eburneum* forms 4-6" mounding mats of half-inch, pink flowers through the summer season. *Drosanthemum hispidum* makes 3-4" mounds of sticky leaves, producing a long succession of lavender-pink flowers.

#### *Hereroa calycina*

Several members of this genus have shown some hardiness, while *Hereroa calycina* has persisted for over 10 years at Denver Botanic Gardens. Plump, wedge-shaped leaves form a dense mound with short-pediceled, yellow flowers that age orange. It is 4" tall.

#### *Lithops*—Living Stone

Possibly the most famous of all mesembs, the cult of living stones has been raised to fever pitch among specialist succulent growers. Catalogs listing hundreds of cultivars are published in the United States, Britain, the Czech Republic, Japan, Germany, and Sweden: obviously there is a close correlation between



growing *Lithops* and the financial well-being of countries. Since *Lithops* occur over much of South Africa, it is no surprise that their ranges overlap regions that experience severe frost. Thus far, four species have proven to be hardy through at least two Colorado winters (a definite indicator of cold tolerance, and I suspect most species would survive typical alpine house conditions provided their exacting moisture requirements are met. All the following have lived through at least one winter: *L. hallii*, *L. hookeri*, *L. lesliei*, and *L. salicola*.

#### *Nananthus*

At one point or another, most species of *Nananthus* have made it through at least one Colorado winter. There is a strong similarity among the species we have grown—all have dark blue-green rosettes of narrow leaves that are more pointed and make tighter clumps than their close cousins, the *Aloinopsis* (into which some workers have attempted to lump them). The flowers are rather smaller than most *Aloinopsis*, although abundantly produced for a long season in late winter and early spring. They are generally a straw-yellow color, often with distinct reddish striping. The hardiest species, *N. aloides* and *N. transvaalensis*, seem to do quite well wedged into a warm crevice in full sun. Their flowers can open as early as December if a winter thaw persists long enough, although March is more typical for heavy bloom.

#### *Rabiea*—Rock Daisy

##### *Rabiea albinota*

Although this species has much the same range as the following, I have not yet had much success with it.

##### *Rabiea albipuncta* (photo, p. 197)

This is the commonest species of this small genus of succulents from the Great Karroo. It forms dense tufts of blunt, purple-tinged, wedge-shaped leaves. The flowers start opening in late winter, lasting sporadically until April—comparatively huge, yellow or orange chalice up to 3" across. It is very hardy and easy to grow.

##### *Rabiea lesliei*

This species is superficially quite similar to the last and has persisted here for 10 years, flowering quite well. It also has bright yellow-orange flowers with a rather more ruddy color in the leaves year around.

#### *Ruschia*—Shrub Ice Plant

Although this is one of the largest genera of ice plants, relatively few of the hundreds of species are in cultivation. There are quite a number found in the higher and colder reaches of the Karroo and Drakensberg that have shown promise thus far. Throughout the Karroo there are a number of densely pulvinate *ruschias* concentrated on the ridges of the highest parts of the Hantamsberg, the Nieuwveld Mountains, and elsewhere. These are very attractive and would make ideal rock garden plants. Unfortunately, most have never been introduced into cultivation.

##### *Rabiea hamata*

This is a vigorous, shrubby succulent that can grow over a foot tall and several feet across.

*Rabiea pulvinaris* (photo, p. 198)

This species is distinguished from the former by its tight, low mounds of toothed, blue foliage and really dazzling, cerise flowers in spring.

*Rabiea putterillii*

The highest altitude species from the Drakensberg, *Rabiea putterillii* is a widespread plant above 8,000', forming huge mounds of silvery, purple-flushed leaves. The pink-to-purple flowers are produced in spring.

*Stomatium*

Together with *Delosperma* and *Ruschia*, *Stomatium* is the largest and most diverse genus of mesembryanthemums for rock gardens in temperate regions. One *Stomatium* at least makes it to high altitudes in the East Cape Drakensberg, but many more are scattered in the highly variable foothills and high ridges that create such an intricate archipelago of mountain ranges throughout the East Cape and central Karroo. Almost every one of the dozens of ranges has at least one species of *Stomatium*, and nearly all demonstrate outstanding hardiness in outdoor cultivation here.

The flowers in this genus are very similar to each other—convex shaving brushes of bright yellow that open in the evening and emit a rich, sweet aroma. There is at least one white-flowered species that has not been hardy. The flower size is highly variable, and the foliage is what distinguishes this genus: leaves can be half an inch long and densely pulvinate, or wildly toothed and flattened. They can stretch to nearly 3" long in *Stomatium agninum*. The sculpturing and variability between different populations of a single species is very gratifying for biodiversity junkies, and I foresee the time when the species of this genus will become collectibles and centerpieces of rock gardens in sunny, dry climates.

*Stomatium agninum*

Boasting by far the largest foliage and rosette of the hardy ice plants, this species produces dramatic and magnificent specimens for a well-drained rock garden. I have grown two forms; the larger of the two came from Huntington Botanical Garden, where the plant was originally received without data. A slightly smaller but still imposing plant originated in the mountains near Tarkastad in the Eastern Cape Province of South Africa. Both have showy, evening blossoms characteristic of the genus.

*Stomatium beaufortense*

I obtained seed of a plant answering to this description in the lofty hills immediately behind Beaufort West in the Nieuweld Mountains of the Great Karroo in the Cape Province. This region is not usually regarded as particularly florally rich in South Africa, but I have been very impressed with the variety of hardy plants originating thereabouts. *Stomatium beaufortense* forms a trim, dense mound with strongly toothed leaves and flowers that range from orangy yellow to pure yellow tints. It blooms at night in April and early May.

*Stomatium loganum*

This is another unusual species with rather flattened foliage that turns a lovely reddish tint in the winter. It likewise has bright yellow, shaving-brush flowers opening at night.

*Stomatium mustelinum*

By far the hardiest species in the genus, the first specimens of this we



obtained were collected by John Lavranos along the highway to the summit of Naude's Nek—an extraordinary location bristling with beautiful wildflowers. I subsequently have visited this site several times, always marvelling at the dense colonies of *Stomatium* growing alongside giant clumps of *Euphorbia clavarioides* ssp. *truncata* and *Ruschia putterillii*. The *Stomatium* makes particularly trim, very dense mounds up to 8" across. It thrives in typical rock garden conditions in full sun. This blooms a month later than the other species in our experience, mostly mid May to June.

*Stomatium patulum*

This is a particularly robust mat-former with very coarse tooting. It flowers in April and May. It is especially variable, with some rosettes tinged a wonderful rose color in the winter months.

*Titanopsis*

*Titanopsis calcarea* (photo, p. 200)

Possibly the stoniest of ice plants (after *Lithops*, of course), this species of *Titanopsis* was discovered by feel rather than sight: a botanist leaned on a limestone boulder, and the seeming rock was supple to the touch: a plant! It does resemble limestone when not in bloom. The foliage is ruggedly warted and pitted and the precise tint of the limestone upon which it likes to grow. It does best on limy substrates in the garden as well. The flowering is sporadic through the garden season, the flowers varying from soft, pinky-orange tints through lemonade yellows.

Thus far, over a hundred species of mesembs have made it through at least one Colorado winter. I suspect that eventually several hundred kinds may prove viable in regions with occasional severe frost. Obviously, in maritime climates, wetness can prove as much an obstacle to survival as extreme cold. But even in the Pacific Northwest and the Northeast a number of Mesembryanthemaceae can provide vivid color and fascinating vegetative form. Members of this family are becoming an indispensable element of rock gardens and general landscapes in sunny, warm climates where steppe and Mediterranean plants are adaptable and appropriate.

Panayoti Kelaidis gardens at his home in Denver, Colorado, and at the Denver Botanic Gardens. His catholic interests include all the groups of rock garden plants available and many not yet in cultivation. His current favorite groups include salvias and other members of the mint family and any hardy perennial that will grow in his climate.

# DOS MAIHUENIAS

by Rod Haenni

The first time I saw *Maihuenia patagonica*, I was driving south in Mendoza Province, Argentina, headed to Bariloche and Patagonia. I noticed some vaguely green mounds resting on top of a distant low hill. The wind was blowing gently (for this part of the world) at around 40 miles per hour, but these remarkable vegetable sheep were unfazed. I walked in awe from mound to mound and knew I must have *Maihuenia patagonica* in my garden.

I traveled south, following the Andes to 50° south latitude. *Maihuenia patagonica* (photo, p. 184) was a dominant species wherever low foothills melted into the heavily glaciated, snow-capped, dormant and active volcanoes of the Andes. Cushions 8' across, 12-18" high, and probably over 100 years of age (judging by their slow growth in cultivation) are common. These kings and queens of the Patagonian bunneries are heavily and variably spined, partially explaining why seven different species synonymous with *M. patagonica* have been alternately created and discarded over the past 125 years.

Ivory toothpicks 3" long adorn some specimens, while others make do with one-half-inch, gray, white, or yellow needles. In addition to the distinctive spination, each main and sub-stem is clothed in succulent, cylindrical, malachite and evergreen leaves, about one-quarter-inch long. Leaf color varies with ultraviolet intensity and cold; temperatures below 0°F bring leaves of darkest nephrite jade, making the contrast with the spines all the more astonishing.

Every feature of this wonderful plant pleases. The flower buds begin to appear in late April, emerging from the center of the stems like tobacco roses, growing and opening the purest white chalice as much as 3" across from May into June. In some forms the flowers are gilded with gold at the base.

Fruits are about 1" in diameter, colored like ripe lemons, juicy, full of shiny black seeds 2-3 mm in diameter. Large plants may bear many fruits in their center, beautifully guarded and rewarding treats for the persistent, although as yet unknown, natural dispersers of seed.

*Maihuenia poeppigii* (photo, p. 188) is equally delightful, forming a low mat less than 2" high. It can spread from a central tap root to cover an area 12" in diameter in five years, given ideal conditions. Most populations of *M. poeppigii*



are in southern Chile, but it does cross into Argentina south of Bariloche. This species grows as a groundcover in and around native stands of the famous monkey puzzle tree, *Araucaria araucana*. Spines are thinner and denser and leaves are longer (to one-half inch) than in *M. patagonica*. The flowers of *M. poeppigii* are uniform, pale lemon-chiffon, blooming in succession in June and July. *Maihuenia poeppigii* tolerates much more moisture than does *M. patagonica* and is slightly (but only slightly) less cold tolerant. Both species are reliable in Zone 5, but I am sure *M. patagonica* would also thrive in protected Zone 4 locations.

Both these Andean steppe-sisters do best in a deep scree or very loose, sandy soil because of their deep taproots. One-year seedlings may already have roots 12-18" long!

Growing maihuenias from seed is not difficult, but germination is erratic, and seed more than 2 years old germinates at a higher rate than does fresh. It is best to use a germinating soil mix with little organic material to avoid damping-off. Bottom heat (100°F) works the best and produces the fastest results for me. I have been using a commercial propagating mat with a thermostat control for the past 18 years, and I highly recommend its use for many kinds of seeds. Seedlings should be transplanted into the rock garden or a deep trough within six months of germinating (transplants as young as 3 months have done just fine). Otherwise the taproot will be damaged.

Cuttings of both maihuenias root easily from late May through early September. From a single cutting *Maihuenia poeppigii* grows into a dense mat 8" across and 2" tall within three years, when planted in the requisite deep scree. *Maihuenia patagonica* grows more slowly, even regally: a single cutting will self-sculpt into a 6" x 6" cushion within three to five years.

*Maihuenia poeppigii* is readily available and is adaptable to both dry and moist climates (10-15" or 30-40") but does need protection from winter rains. *Maihuenia patagonica* is presently undergoing rapid propagation and will be available from several growers over the next few years. Seed is sporadically available from the various Patagonian expeditions; remember that older is better. More tolerant of cold but less tolerant of winter rain, *M. patagonica* is more than worthy of your moisture-prevention ministrations should you live in one of those nasty winter-wet climates. Can you successfully grow acantholimonas? Then you should be able to succeed with *M. patagonica*.

Finally, before I forget, both maihuenias belong to a very large family known for its New World distribution, its large flowers, and its many hardy genera: the Cactaceae. Surprise!

Rod Haenni gardens in Littleton, Colorado, where he grows a very wide variety of Cactaceae and other succulents, as well as traditional rock garden plants and xeriscape perennials. He originally became interested in succulents while working in Arizona and California as a geologist, and naturally he wanted to grow the kinds that were hardy in Colorado.

# A CALIFORNIA ROCKERY

by John N. Trager

When starting my own garden I resolved not to plant succulents. After all, I worked with those all day at my job at the Huntington Botanical Gardens, and there were lots of other plants I wanted to learn about. Gradually, over the years, however, my resolve was weakened by succulents that were too good not to plant. The result is an eclectic mix of drought-tolerant, low-maintenance plants in an arrangement that even has some coherent design.

The garden began with the removal of the St. Augustine grass lawn that sloped the 4' from foundation level to sidewalk. The grade was then recontoured to create a narrow, barely sloped area bordering the sidewalk and a peninsula of soil bounded by a sinuous rockery. This mound of soil and the plantings atop it provide some degree of privacy and sound baffling from the street below. The back side of the peninsula dips down to the flagstone path that curves and slopes gradually up to the house.

The construction of the rockery was inaugurated with a "rock party" of loyal friends lured with the promise of good food and drink. The choice of

rock was determined by availability and cost—granite from local washes draining the San Gabriel Mts., available (with permission) from various sources, free for the taking save the wear and tear on the back.

Once the rockery was completed, I began to experiment with various perennials and small shrubs. Those that have stood the test of time and drought include various *Anigozanthus* hybrids (kangaroo paws), *Ceanothus* cultivars, and *Limonium perezii* (statice). The original dwarf, red-flowered *Anigozanthus* has now been joined by others: *A.* 'Pink Joey', with pastel pinkish "paws"; the striking red-and-yellow *A.* 'Harmony' (photo, p. 203); and a tall, deep velvety red-flowered cultivar. The latter two consistently provide long-lasting vertical elements through spring and summer.

The tried and true Carmel creeper, *Ceanothus griseus* var. *horizontalis*, forms a rich, glossy, green carpet under the dripline of large coast live oaks, *Quercus agrifolia*, that line the street. It even flowers in this degree of shade. A white-flowered ceanothus might seem to defeat the purpose of this genus in the garden, prized as it is



for its blue flowers. Nevertheless, I can recommend *C. 'Snowball'*, which has stayed compact and during this cool, damp spring was covered with clean white flower clusters for over a month.

Other durable shrubs in the garden include that most adaptable of manzanitas, *Arctostaphylos densiflora* 'Howard McMinn', with the typical dark red, peeling bark and delicate, white, urn-shaped flowers. Initially a low, rounded shrub, it gradually elongates into a more open structure, revealing its beautiful bark. Pruning must be very judicious to avoid being obvious, though a once-a-decade cutting to the ground could serve to simulate an occasional wildfire.

*Chrysanthemum pacificum*, a member of the genus in the broad sense, is showy in the garden, although its yellow heads lack ray flowers. The rest of the year its fuzzy, scalloped leaves blend in with the granite of the rockery. Beside it grows *Aeonium haworthii*, which with its gray, rounded form almost simulates a rock itself. *Cotoneaster congestus* creeps over the rocks and provides an innocuous, deep green foil for the plants growing around it.

The herbaceous *Geranium incanum* (photo, p. 203) now reseeds and fills in the spaces, as does *Gaillardia aristata*, the annual Indian blanket flower, which survives our mild winters and reseeds and flowers so constantly as to appear perennial. Another plant that reseeds vigorously is *Bulbine frutescens* (photo, p. 203) with fleshy, terete leaves and yellow flowers with the bearded stamens (the filaments are covered with hairs) typical of the genus. Better behaved is the self-sterile, orange-flowered selection *B. frutescens* 'Hallmark' (photo, p. 202).

Various grasses have been tried and have succeeded: the annual hare's tail grass (*Lagurus ovatus*); *Muehlenbergia*

*capillaris*, with its delicate inflorescences forming a pink mist hovering over the plant; and the almost weedy *Stipa tenuissima*, which resembles tufts of blond hair waving gently in a breeze. The grass-like, restionaceous *Chondropetalum tectorum* has proven to be a tough plant, retaining its rich green color in the most intense heat and drought. Its wiry, cylindrical leaves are beautifully banded with chestnut-brown bracts, and the leaves are used in its native South Africa to thatch roofs. The plant's lush, marshy appearance has led some to grow it as an aquatic plant, which treatment it tolerates amiably, though sometimes with a bit of chlorosis.

Resembling grasses on steroids with their broader, spine-margined leaves, the terrestrial bromeliads in the genus *Puya* are marginally succulent. Native to Chile and Argentina, they are hardy to temperatures in the teens, well below our usual few light frosts. Though tolerant of considerable drought, they really do better with more ample watering, belying their xeric affinities. *Puya venusta* and *P. coerulea* are both medium-sized species that have flowered in my garden. The silvery rosettes of the former sport branched clubs of deep purple flowers in spring, while the greener *P. coerulea* has nearly black flowers that spread from reddish flower stalks. More diminutive puyas on my list to plant are *P. humilis*, rather like a miniature version of *P. venusta*, and *P. mirabilis*, more like *P. coerulea* but with 4"-long, ivory-colored flowers. Both species have rosettes no more than 12" across.

Continuing along the trend towards succulent-leaved rosettes, we encounter *Manfreda maculosa* (photo, p. 202), which has performed admirably in the dry shade of a California live oak that overhangs a portion of my garden. Its interestingly spotted

rosettes persist and look good for a year or two after its apex terminates in a flower stalk. The leaves are its main attraction, as the flowers are a rather drab olive-green. The inflorescences gradually arch out over the sidewalk and annoy passersby, slapping the unwary in the face as they take their daily constitutional.

Finally, there are various bona fide rosette succulents, for example the smallish agaves, with gray leaves attractively imprinted with the spiny leaf-margins when in bud: *Agave colorata* and *A. guadalajarana*. Then there are the aloes, many of the smaller species of which could work. Those I've used are an *Aloe dawei* hybrid, with flowers of an unusual shade of pastel orange (photo, p. 202-3); *A. chaubadii*, with grayish rosettes not unlike those of the agaves mentioned above; and two bright red-orange-flowered dwarfs: *A. virens* (photo, p. 202) and *A. 'Grande'*. The former flowers only in the spring but is perhaps the showiest of the small aloes. *A. 'Grande'*, on the other hand, is a repeat bloomer. This hybrid by John Bleck of Santa Barbara, California, has dark green foliage that disappears into the background, making its flowers appear to hover just off the ground.

Other succulents that do well on the edge of the oak canopy are *Senecio mandraliscae* and *Pelargonium echinatum*. The senecio retains its glaucous blue color better with a bit of shade and is one of the most durable succulent groundcovers. I've seen 30-year-old plantings that look as fresh as ever.

*Pelargonium echinatum*, the so-called cactus geranium, has persistent stipules that form prickles along the succulent stems. Its pretty flowers provide a delicate contrast to its prickly personality, the red-marked white petals blushing pink, providing a two-toned display.

I've tended to avoid the more conspicuously fleshy succulents with a few exceptions. For example, *x Graptoveria 'Opalina'* is a plump, rosette succulent with almost opalescent, grayish leaves with lavender and pinkish tinges. It derives its hardiness (to 20°F) from *Echeveria colorata* and its blushing plumpness from *Graptopetalum amethystinum*.

In the rocks above other Crassulaceae have not been as successful. *Crassula capitella 'Campfire'*, for example, is prone to mealy bugs when subjected to my level of drought and gradually dwindles, though it keeps its intense scarlet foliage color. I have more hope for *Kalanchoe thyrsiflora*, which displays a more dusky reddish color in its fans of paddle-shaped leaves.

Cacti have come and gone. *Borzicactus samaipatanus* has the right shade of coral-pink flowers but tended to be smothered by its herbaceous companions and didn't flower well. The dwarf, compressed-globular, silver-dollar-sized, purplish-brown stems of *Frailea castanea* thrived for a time nestled in a rock crevice, until they too were grown over by more aggressive herbs. *Cleistocactus straussii* likewise succumbed, but I intend to try again with a larger specimen—the straight, silvery-white, organ-pipe stems should be quite dramatic shooting out of the fountain of *Chondropetalum tecorum*.

Other cacti I may not be able to resist are some of the new *Echinopsis* hybrids, or easter-lily-cacti, created by Bob Schick of Northridge, California. Some 45 cultivars have so far been introduced through the Huntington Botanical Gardens' plant introduction program, the International Succulent Introductions (ISI). Another 150 selections are yet to be introduced. These are globular plants that produce flush-



es of magnificent, trumpet-shaped flowers, some to 6" in diameter, every few weeks from April to November. One of my first choices would be 'Afterglow', with orange flowers brushed with magenta at the tips of the petals.

Some neighbors stop to admire and compliment the garden, though precious few have decided to follow my lead. I attribute this not so much to lack of desire as to the misconception that what I have done is too time-consuming. In fact, I spend far less time in maintaining my 20' by 30' rockery than the mow-and-blow gardeners spend on the lawns and hedges that fill most of the yards up and down the street.

Of course there is no mowing. Rather, most of my gardening time is spent weeding and grooming; the former concentrated in the spring, the latter through summer, fall, and winter. Neither consumes more than a few hours a week, if that. Grooming in many cases consists of an annual shearing to the ground just before new growth begins. The result is complete rejuvenation.

This once-a-year pruning of herbaceous and some shrubby material seems to be a totally foreign concept to many who make their living as maintenance gardeners. Frequent victims of this lack of knowledge are shrubs like *Salvia leucantha*, the Mexican sage, perhaps because it almost never stops blooming in our climate, and gardeners are reluctant to cut off the faded but still colorful inflorescences. The result is that plants are sheared into balls in which the lush, clean new growth has to find its way up through the old and faded, so that the plants never achieve their full glory. Worse yet are attempts to "ball" *Dietes vegeta* which, if anything, only needs occasional division to keep it in bounds.

Watering is done via a largely concealed drip system which is turned on manually for half a day or so about every other week during the summer and fall. Winter rainfall and late spring dew from the "May gray" or "June gloom," as our early-morning marine layer of low-lying clouds at this time of year is known, provide sufficient water during these seasons. My corner of the foothill community of Sierra Madre falls into *Sunset's Western Garden Books* zone 21, USDA zone 9, and experiences only light early morning frosts during the average winter. However, many of the plants in my garden are hardy to more extreme zones.

My dabblings with succulent landscaping have only begun to explore the potential for more general garden use in combination with other xerophytes. Places like the Huntington showcase many species that will grow in southern California, but there remains a broad frontier of design possibilities and planting combinations to be explored. It is my hope that the Huntington and its ISI program and other sales events that make some of the wealth of succulents available can also inspire gardeners to "flesh out" their landscapes.

John Trager is Curator of Desert Collections at Huntington Botanical Gardens in San Marino, California. He started gardening in his teens, when he was suddenly possessed by the urge to take cuttings of the succulents that had been growing unmolested in his backyard for years.

# FLORENS DEBEVOISE

by Marnie Flook

Florens DeBevoise was one of the three founders of the American Rock Garden Society. The other two founders have already been profiled in *A History of the American Rock Garden Society*: Martha Houghton as President and Dorothy Hansell as Editor. The story of how the Society began has also been told. But except for her photograph and a few notes about her and her nursery in the *History*, little has been written about Florens DeBevoise, who first thought of forming a rock garden society in 1931.

DeBevoise was born in Oakland, California, and lived in Carlsbad, New Mexico, before moving to Greens Farms, Connecticut. There she started Cronamere Alpine Nurseries in 1929. According to Dorothy Hansell, the nursery was not only her hobby and avocation but was also "planned to be of educational benefit." Florens wrote that she was trying to make her rock garden "a botanical display of alpine plants so that garden club members and others interested may see such subjects in a growing state and find out their requirements." An account of how her rock garden had its beginning was told to Dona Caldwell, a land-

scape designer doing research for the Fairfield Historical Society in Connecticut. Apparently Mrs. DeBevoise was driving to New Haven, Connecticut, when she spotted a "mountain of rocks" near the road and arranged for a man to bring them to her property. They formed a circular hill in the garden that was then planted with alpine and rock garden plants.

The nursery was in existence from 1929 until 1941, when it closed down because of World War II. According to Dorothy Hansell, Cronamere Alpine Nurseries contained probably the largest collection of alpine and rock garden plants in the country during those years. The 1936 catalog listed 23 species of gentians; 26 species of *Saxifraga*; over 40 species of *Primula*; 17 species of *Penstemon*; and 33 species of *Campanula*; plus hundreds of other plants. The catalogs were illustrated with black-and-white photographs of plants and views of the DeBevoise rock gardens, one of which appears in the *ARGS History*. The catalogs included a recommendation to join *ARGS* and noted important periodicals for the rock gardener. In addition to plants for the rock garden, the catalog



offered "attractive and suitable collections of plants for 'Table Gardens'" and "the perfect garden label."

She conducted extensive experiments on propagation of alpine plants at her renowned nursery. Many rare herbaceous plants and shrubs imported to the US Agricultural Station were sent to her to determine correct conditions of cultivation and hardiness in the East. She also developed methods for dwarfing different types of plants, which she exhibited in miniature gardens. Apparently she discovered Claude Barr through an article he had written about *Pulsatilla patens*; she encouraged him and sent his plant list out with hers.

Florens DeBevoise wrote for several horticultural magazines in the 1930s and '40s. Articles that appeared in *Gardeners' Chronicle of America* included: "Western Plants on Eastern Gardens," "Companions in the Rock Garden," "Calochortus," and "*Daphne cneorum*." She also wrote numerous short notes and comments on various plants for the ARGS pages in the magazine, including a long column on primroses, androsaces, and gentians. She wrote about lewisias and saxifrages (a four-part series) for the *National Horticultural Magazine*.

DeBevoise also wrote for the ARGS *Bulletin*. "Planted Walls" was the longest and probably the most important article. Her detailed explanation of how to build and plant a dry wall was followed by a long list of suitable plants for both sun and shade. The best position for each plant was also listed: base, face, or top of wall. The article was illustrated with two photographs she had taken of planted walls at Cronamere (Vol. 2[1], 1944). "House Plants from the Rock Garden" was a subject rarely discussed in the *Bulletin*. Hardy cyclamens were described and recommended in

"Sowbread," the first mention of this genus in the *Bulletin*. The last two articles she wrote for the *Bulletin* were in 1950: "Late Bloom in the Rock Garden," and a review of Lawrence Hill's *Propagation of Alpines*, a subject which interested her deeply.

DeBevoise initiated a series in the *Bulletin* called "Rock Garden Quiz," in which she answered questions about plants (such as *Eritrichium*, *Lithospermum*, *Primula* and *Lewisia*) and procedures (such as pruning *Daphne cneorum*, planting seeds, planning for summer and fall bloom). The quizzes appeared in the *Bulletin* during 1945 and 1946.

Florens DeBevoise not only wrote for the *Bulletin* but was active in the Society from the time she, Dorothy Hansell, and Martha Houghton organized ARGS in 1934. She was a member of the Board of Directors until 1942 and then one of five Vice Presidents from 1943-51. She was chairman of the Editorial Committee for the new *Bulletin* for four years and one of the Associate Editors from 1946-51. ARGS dedicated its 1946-1947 Year Book to her:

"She has always been ready to share her knowledge of rock plants, and to open her rock garden with its wealth of beautiful alpines and other plants to the members of the Society. We deeply appreciate all that Mrs. DeBevoise has done for our Society and for rock gardening in America..."

Florens DeBevoise died unexpectedly on October 13, 1951. Dorothy Hansell's obituary discussed Cronamere Alpine Nurseries and described Mrs. DeBevoise's many other achievements:

"She took several courses in botany and landscaping, supervised the building of numerous rock gardens in Connecticut, New York and New Jersey. She also built Japanese gardens, one of which received a special prize at the New York Flower Show. In 1939 she was awarded the gold medal of

the Garden Club of America for another garden at the New York Flower Show.

After closing the nursery, she continued to raise plants, even though help was difficult to procure. She worked on miniature gardens and the dwarfing of plants. Among her many other activities was photography, her collection of about three thousand colored slides of gardens having been shown to various garden clubs.

Outside the field of gardening she engaged in such diverse activities as wood-carving, crewel work, and an original study in combinations of semi-precious metals with seashells, out of which she created both miniature gardens and jewelry.

In each of these fields she worked with characteristic enthusiasm and thoroughness, studying her technique under the best teachers available.

With all these interests, rock gardening unquestionably dominated her life, and with her passing it has sustained the greatest loss. Her help in the affairs of the Society will be sorely missed."

Martha Houghton said that ARG S had lost "a very wonderful and valuable member; Florens DeBevoise was probably the most distinguished alpine gardener among women in this country."

## THE FLORENS DEBEVOISE MEDAL

The Florens DeBevoise Medal was presented to the Garden Club of America by the Sasqua (Connecticut) Garden Club "in memory of Mrs. Charles I. DeBevoise, a founder and distinguished member of the Club." The medal is awarded for horticultural achievement in the fields of hybridizing, collecting or nurturing, with preference to plant material suitable for rock gardens. ARG S Recipients of the Florens DeBevoise Medal include:

Mrs. J. Norman Henry	1960
H. Lincoln Foster	1962
Mrs. Alfred C. U. Berry	1964
Leonard J. Buck	1971
Edmond Lohbrunner	1977
Mr. and Mrs. Donald P. Smith	1980
Frederick W. Case, Jr.	1988
James E. Cross	1990
Francis Cabot	1992
Panayoti Kelaidis	1994

Marnie Flook is NARG S Archivist and author of *A History of the American Rock Garden Society*, published earlier this year by the North American Rock Garden Society. She gardens near Chestertown, Maryland.



# PUBLICATIONS

SPONSORED BY THE SOCIETY

by Marnie Flook

A chapter in *A History of the American Rock Garden Society*, "The Bulletin and Before," describes the Society's pages in the *Gardeners' Chronicle of America* (1934-1943) as well as the *Bulletin* and its editors (1943-1994). Also discussed in the chapter are the five *Year Books* (1937-1941), the series of *Saxiflora* leaflets, the *Bulletin Board*, and the Indices. This article is intended to record additional publications sponsored directly or indirectly by the ARGS.

Membership lists were at first included in the *Year Books*; later they were sent as separate publications. The oldest list of members in the Archives is a typed list of names and addresses dated 1936. Since 1957 a *Members' Directory* has been published about every two or three years. The *Seed Exchange* and *Slide Collection Lists* are also described in the *History*.

## EARLIEST PUBLICATIONS

The January 1936 ARGS column in the *Gardeners' Chronicle of America*, announced that the Brooklyn Botanic Garden's leaflet on preparing herbarium specimens would be sent to all members. Later a leaflet on rock garden construction was distributed. During the 1938 New England Flower Show 20,000 leaflets about rock gardening and the ARGS were handed out to people viewing the New England Region's prize-winning exhibit.

*The Rock Garden*, by Henry T. Skinner (Cornell Extension Bulletin #403, 1939, revised 1950).

Although published by Cornell University, *The Rock Garden* is mentioned here, since it was reprinted by the Society in 1977 and sent to all new members of ARGS. The cover featured a black-and-white photograph of a rock garden, taken by P. J. van Melle. The 38-page booklet was illustrated with black-and-white photographs and line drawings. The contents covered every aspect of rock gardening, including kinds of gardens, site, rocks, planning and building formal and informal rock gardens, using water, planting, soil, plants, and maintenance.

*The Rock Gardener's Hand Book* (1965).

In 1964 the officers of ARGS decided that because there were so many articles of interest among those printed in the *Bulletin*, a special edition including these articles should be printed, to be called *The Rock Gardener's Hand Book*. As President Emeritus, Harold Epstein was appointed chairman of the committee formed to produce this book. He explained in his introduction that the committee felt they had material for a handbook five times the size of the one they planned to publish, but gradually they were able to reduce the contents to a workable size. The first edition of the book had a hard cover bound in green; a later edition was published with a soft cover. *The Rock Gardener's Hand Book* was the first book to be published by ARGS.

The articles in the 140 pages of the handbook were written by some of the most talented members of ARGS. The table of contents reads like a *Who's Who* of American rock gardening. The 36 articles cover almost every rock garden plant group, such as *Phlox*, by Wherry; *Heath Family*, by Preece; *Epimedium and Vancouveria*, by Epstein; *Foam Flowers*, by Wherry; *Trilliums*, by Henry; *Houstonias*, by Hansell; *Primulas*, by Baylor; *Penstemons*, by Bennett; *Gentians*, by Klaber; *Campanulas*, by Senior; *Columbines*, by Regan; *Pulsatillas*, by Hayward.

Other articles in the handbook are: *Native Plants*; *Rhododendrons*; *Ferns*; *Growing Plants from Seed*; *Sempervivums*; *The Christmas Rose*; *Lewisias*; *Dwarf Conifers*; and *Using an Alpine Frame*. This article, by Kurt Baasch, originally appeared in the *Gardener's Chronicle of America*. Harold Epstein wrote the last article: *The Rock Gardener's Library*, which listed 68 books and several encyclopedias and dictionaries. Although many copies of the *Handbook* were sold, it eventually went out of print.

*Seed Germination of Rock Garden Plants* (1971)

Edited by Dara E. Emery of the Santa Barbara Botanic Garden, this publication was a study of seed germination of rock garden species. Report sheets were sent out with Seed Exchange orders between 1967 and 1971; members were urged to return them to Mr. Emery. The 46-page booklet, the same size as the *Bulletin*, listed results based on reports sent to Mr. Emery from 27 members. Germination results of 780 different rock garden plants were listed in the publication.

*Plants and Environment: A Study in Ecology* (1967)

This short publication was written and illustrated by B. LeRoy Davidson and published by the Northwestern Region of ARGS in cooperation with the Pacific Science Center, Seattle, Washington. Though not an official ARGS publication, it seemed appropriate to mention it here. The 16-page booklet discussed rock plants and their many habitats.

*Alpines of the Americas: The Report of the First Interim International Rock Garden Plant Conference, 1976* (1980)

The Interim International Conference was organized jointly by the Northwestern Chapter of ARGS and the Alpine Garden Society of British Columbia and held in Seattle, Washington, and Vancouver, British Columbia, Canada, during the week of July 18–25, 1976. Sharon Sutton, who edited the conference report, wrote of the "amazing variety of unexpected and peculiar dif-



ficulties and delays to be surmounted," including dealing with four different printers. The report was finally published in October 1980. The 372-page volume, cross-referenced and indexed, had over 100 color photographs, a number of black-and-white photos, and several pages of drawings. The table of contents listed over 50 different subjects presented by 40 lecturers.

Bob Means wrote in the January 1981 Bulletin Board: "All the talks given at Seattle are very carefully edited and prepared in chronological order. Some of the ancillary events of the Conference are also dealt with in an effective way. This book is not intended to be an encyclopedia of the alpinists of North America, rather it is a series of essays, monographs, presentations, what you will, of various viewpoints of various North American genera."

#### *BBG Handbook of Rock Gardening (1980)*

The Winter 1977 Bulletin Board announced that a working group had been established to review the desirability of revising the out-of-print *Rock Gardener's Handbook* and suggestions were requested. The need for a new booklet for beginners had been evident for some time. Not hearing from anyone and being aware of the Brooklyn Botanic Garden's *Plants and Gardens* handbook series, the chairman, Marnie Flook, wrote to the BBG editor, Frederick McGourty, Jr., inquiring if they were considering a revision of their *Handbook on Rock Gardens*, which was then 25 years old and had been reprinted often. If so, then a new BBG *Handbook* might be the answer.

This 1952 BBG *Handbook* contained articles by many fine authors, some of whom were members of ARGS. Fred McGourty replied that although BBG had not considered redoing their present handbook, they would be interested in a cooperative venture with ARGS: ARGS to be responsible for the authors, and Brooklyn Botanic Garden to take care of editing and publishing the articles as a new handbook in the BBG series.

After considerable and lengthy discussions at a number of Board Meetings, a Memo of Understanding between the Brooklyn Botanic Garden and ARGS was finally signed in the spring of 1979 by Elizabeth Scholtz, BBG Director; Frederick McGourty, Jr., BBG Editor; Jim Minogue, ARGS President, and Donald M. Peach, ARGS Secretary. Marnie Flook, who was appointed Guest Editor, was to organize the project, decide on subjects and authors, and be responsible for sending the manuscripts to Fred McGourty on time. Publication was planned for some time in 1980.

One of the concerns of the Board of Directors had been that manuscripts that should go to the *Bulletin* would be written for the BBG project instead. Although the Editor, Timmy Foster, was not worried about this problem, a meeting was held between Fred McGourty, Marnie Flook, and Linc and Timmy Foster to discuss subjects, authors, etc. It was important that all parts of the continent be represented. A list of names and titles was put together, authors were contacted, and almost everyone asked agreed to contribute to the handbook.

The *Handbook on Rock Gardens* was published in August 1980 and has gone through many printings since. The 24 contributors, all members of ARGS, wrote on every aspect of rock gardening; their articles well-illustrated with numerous photographs and drawings. Also included were several paragraphs about the American Rock Garden Society, its objectives and the advantages of membership. Although the *Handbook* was published by BBG, it is included because of

ARGS' substantial involvement in the project. The *Handbook* is now out of print.

*North American Wildflowers*, Portfolios by Laura Louise Foster (1982)

In 1981 the Board decided to publish a collection of Timmy Foster's wildflower drawings as writing paper and in three sets of portfolios. The archives contain considerable correspondence between President Bob Means, Secretary Buffy Parker, and Treasurer Frank Cabot regarding price, the number to order, how to market them, etc. Several thousand sets were printed; many were sold, but many remained. These outstanding sets of drawings are still being sold by the Bookstore.

Each of Timmy's beautifully detailed plant drawings is printed on an 11" x 14" sheet of heavy paper. Each portfolio contains twelve of these sheets, plus Linc Foster's description of each of the illustrated plants. Genera represented include: *Aquilegia*, *Iris*, *Phlox*, *Shortia*, *Galax*, *Sanguinaria*, *Dicentra*, *Trillium*, *Jeffersonia*, *Tiarella*, *Cornus*, and *Linnaea*.

*Sentimental Journey* (1984)

This report was published by the Northwestern Chapter for their 50th Anniversary which was celebrated at the Ninth Western Study Weekend, held in Port Townsend, Washington, February 24–26, 1984. The 97-page book with a gold-and-black cover was edited by Gary and Penny Finholt and dedicated to charter member Frances Roberson. The first part lists the program—lectures, displays, schedule.

The second part contains histories of the western North American chapters of ARGS and of the two Canadian rock garden societies, each written by a member of the pertinent organization. Represented are the Northwestern, Western, Arizona, Columbia-Willamette, Rocky Mountain, and the Siskiyou Chapters of the ARGS, the Alpine Garden Society of British Columbia, and the Vancouver Island Rock and Alpine Garden Society. The third part has articles by Ed Lohbrunner, Rae Berry, and Irmgard Grabo; it also includes the Siskiyou Rare Plant Nursery catalog for 1964, and a list of the 330 registrants. The foreword was by Marvin Black, the program chairman and organizer of the weekend.

*Rock Gardening* (1988; revised, 1991)

A Special Issue of *The Avant Gardener*, a monthly horticultural newsletter, appeared in June 1986 (Vol. 12[8]). An eight-page article was written for beginning rock gardeners by Marnie Flook. A replacement for the Skinner booklet had been needed, so President Lee Raden and Secretary Buffy Parker requested and received permission from the Powells, editors of *The Avant Gardener*, to reprint the article. The 12-page pamphlet, 5 1/2" x 8 1/2", was sent to each new member beginning in 1988. In 1991 the pamphlet was revised and reprinted with an expanded list of recommended rock garden plants and recommended rock gardening books.

*Rocky Mountain Alpines* (1986)

This volume was a joint effort of the three sponsors of the Second Interim International Rock Garden Plant Conference 1986: the American Rock Garden Society, the Rocky Mountain Chapter of ARGS, and the Denver Botanic Gardens. Jean Williams, the editor, wrote in the Preface:



Because the Conference emphasizes visits to view our local alpinists—in the mountains, at Denver Botanic Gardens and in local private gardens and nurseries—and because the Rocky Mountain region is relatively little described in rock gardening literature, the Committee decided that a pre conference book highlighting Rocky Mountain alpinists would be more useful than the traditional record of proceedings, produced ex post facto. This book is the result: it was produced by a large number of dedicated people.

The large (8.5" by 11.5"), handsome, hardcover book of over 300 pages with 233 drawings, photographs, and maps, and 142 full color photographs, covers alpine plants from every section of the Rocky Mountains from northern British Columbia to the Organ Mountains in New Mexico. Cultivation of the plants in various situations is discussed in detail. It was published by Timber Press in 1986 in time for the book to be distributed at the Conference. Many of the 45 people who contributed articles were present for a book-signing during the conference in Boulder.

#### *Porophyllum Saxifrages* (1987)

In the early 1980s Josef Starek of Czechoslovakia proposed that ARGS publish Dr. Horny's book on *Porophyllum saxifrages*. The archives contain a large amount of correspondence for and against the project. The committee finally decided that ARGS would not publish the book but would donate \$2,000 towards the cost of publishing it. *Porophyllum Saxifrages* was published in 1987 by Byam-Grounds Publications, England.

*Cuttings from a Rock Garden: Plant Portraits and Other Essays*, by H. Lincoln Foster and Laura Louise Foster, with drawings by Laura Louise Foster; edited by Norman Singer (1990)

Published by Atlantic Monthly Press, this is a collection of essays and articles written by both Linc and Timmy Foster over a period of 30 years. Most of the articles first appeared in the *Bulletin*; a number were originally printed in *The Connecticut Plantsman*, the newsletter of the Connecticut Chapter, 1973–75; and several are from *Alpines of America*, described above. Royalties from the sale of *Cuttings from a Rock Garden* have been donated to ARGS by Norman Singer.

#### *Rock and Alpine Plants* (1993)

This compilation was put together by members of the Hudson Valley Chapter. Tom Stuart, chairman of the project, wrote in the March 1992 *Hudsonia*, the chapter newsletter: "We are going to produce an introductory pamphlet on rock gardening to support a membership drive; we felt that the existing piece by Marnie Flook, sent to all new ARGS members, takes a sensible approach but is too brief and lacks illustrations. Harold Epstein found a text by the late T. H. Everett and obtained rights to it, Harold Lange and Jacques Mommens are typing, Helen Ferguson is editing, and Louisa Tine is designing."

In addition to the report on rock gardening by Thomas H. Everett, originally written for his *Illustrated Encyclopedia of Horticulture*, the booklet includes a list of good rock garden plants. It was sent to all new members of ARGS until recently. It is now out of print.

#### *Woody Plants in the Rock Garden* (1995)

This volume is the Proceedings of the 1995 Western Study Weekend, spon-

sored by the Northwestern Chapter. It was prepared by Alice Lauber, who recorded the talks and then transcribed them. The topics covered in the 79-page booklet include *Kalmiopsis*, *Daphne*, Dwarf Conifers, Ericaceous Shrubs, Dwarf Rhododendrons, New Woody Plants, plus lectures on microclimate and plant hardiness. Lecturers were Steve Doonan, Phil Pearson, Dan Hinkley, Don Howse, Panayoti Kelaidis, Brian Mathew, J.C. Raulston, Barry Starling, and Gerald Straley.

#### *Rock Garden Plants of North America* (1995)

In 1992, a project to review the first 50 years of the *ARGS Bulletin* was started by Tom Stuart, Anne Spiegel, and Jacques Mommens. The plan was to evaluate and choose the best articles to be reprinted in one or more books. Over 100 members read and recommended certain articles as being outstanding and worthy of inclusion. The committee chose North American rock plants to be the subject of the first book, with Jane McGary as Editor. As explained in the Spring 1994 Bulletin Board, "We are starting with this title and subject because we have an abundance of good material and we think this is the most marketable subject, especially internationally. If it does well, we intend to use the proceeds to finance other publications, such as *Rock Gardening Techniques*."

*Rock Garden Plants of North America* was published by Timber Press in the autumn of 1995. It contains 58 articles reprinted from past issues of the Bulletin. The book is organized by sections of the continent: The Far West is represented with 21 articles; Great Basin and Rocky Mountains by 10; The Plains, 6; the Northeast, 5; the Southeast, 8; and North American Plants in General by 8. Two of the earliest articles were by Edgar T. Wherry and Claude A. Barr, who wrote for Society publications from the founding of ARGS. Eight articles were contributed by Roy Davidson and five by Panayoti Kelaidis, both prolific contributors to the *Bulletin*.

#### *A History of the American Rock Garden Society*

Histories of ARGS were proposed and actually begun several times: to mark the 20-year, 40-year, and 50-year anniversaries of the Society. The Fall 1993 Bulletin Board announced that ARGS Archivist Marnie Flook had offered to put together a 60-year history of the Society. Chapter archivists were asked to submit their chapter histories for the project. The 200-page history was published as a special issue of the *Rock Garden Quarterly* in January 1998.

#### Proposed Publications

The Board has often discussed further publications. The Summer 1979 Bulletin Board announced support for Frank Cabot's proposal that "the Society sponsor development of a series of monographs on appropriate North American genera..." *Trillium*, *Penstemon* and *Phlox* were suggested as possible genera to be treated. Several such treatments have been published recently by Timber Press.

Also, H. Lincoln Foster envisioned assembling and publishing Louise Beebe Wilder's writings about rock gardening. After Linc's death Frank Cabot collected and edited the material, but neither he nor Tom Stuart were able to find a publisher or interest ARGS in undertaking the project.



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# SEED EXCHANGE 1998

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## How the Seed Exchange Works

Donors send seed to the Intake Chapter at the address given on the Seed Donation Form (PO Box 703, Estacada, OR 97023 USA). Here the seed is cataloged on a computer database, which is used to produce the Seed List. Each donor is assigned a Donor Number.

After the last date for acceptance of seed (**November 1, 1998**), the seed is sent to the Packaging Chapter. The finished packets are then sent to the Order-Filling Chapter, which receives the order forms and sends the seed out. Orders are filled from early January to late February; after that the surplus seed is sent to NARGS chapters for distribution to their members.

## Advantages of Participating

Donors receive 35 packets of seed, while non-donors receive only 25. Furthermore, orders from donors are filled before those from non-donors. Finally, donors receive the recognition and gratitude of their colleagues!

## Collecting Seed

Collect seed in your garden and while viewing plants in the wild. Do not collect seed in areas where this is forbidden, such as national parks and certain other preserves. Clean the seed by removing it from capsules, discarding debris and chaff. If the seed is enclosed in a fleshy fruit, remove as much moist material as possible.

## Packaging Seed for Donation

Please use paper or glassine (not plastic/polythene) envelopes no larger than 5x10cm (2x4"); suitable envelopes may be purchased from the NARGS Bookstore.

Very clearly write the botanical name, collection site (if wild), and your surname on each envelope (the donor's name is needed to ensure that the correct donor number appears in the Seedlist). Be sure that the seed envelope does not leak! Very small seed should be wrapped in a piece of waxed paper or foil before being placed in the envelope.

If any seed is unusually moist, enclose it separately in plastic to prevent the moisture from ruining the rest of the seeds. This applies particularly to aroids and peonies.

If you wish to send seed that must be refrigerated to retain viability, you should send it in close to the deadline. We cannot provide special storage of seed after mid-September, when filing begins.

Fill out the Seed Donation Form (see below). Place the seed envelopes in the same order as they are listed on the form and put rubber bands around each group of 5 to 10 envelopes. *Please do not tape the envelopes together, because it is difficult to separate them without damaging them.*

Place seed envelopes, Donation Form, and a mailing label with your own name and return address in a strong mailing envelope or box. Padded or cardboard envelopes are best. If you cannot get one, wrap the seed envelopes in some kind of padding inside the envelope. To avoid damage, do not put loose seed packets inside large envelopes. If you do not send a return mailing label, we will not acknowledge receipt of your donation; however, you will find your donor number in the Seed List.

### **Sending the Seed**

Mail your donation to the address on the Donation Form as early as possible to help the cataloger. **DO NOT SEND SEED TO ANY OTHER ADDRESS.** Overseas donations should be mailed by October 10, 1998, Canadian by October 15, and USA by October 25. No item can be added to the catalog after November 2, 1998. Seed that arrives too late to be listed will be sent out as substitute items and distributed to chapters.

### **Late Donations**

If you are sure you will send seed after November 1, you may send a list to the Intake Manager for inclusion in the catalog and mail the seed at any time up to **December 1**. This special service may be used only for late-ripening or wild-collected seed; it is not intended to provide donor numbers to procrastinators!

### **Special Collections**

We are delighted to assist in the distribution of large collections from botanical expeditions. Collections of more than 50 items from a single region can be listed in separate sections of the catalog, with abbreviated site information. If you expect to donate such a collection, please inform Jane McGary at the Intake address as soon as possible so we can plan for your list.

### **Seed Donation Form**

This form is used by the cataloger entering your donation on the computer. If you do not have a blank form, please enclose a clearly written or typed list of the seeds you are sending. You do not need to fill out all the parts of the form. Only the botanical name (and wild collection site, if any) are necessary. The remaining spaces (class, height, flower color) should be used only if the item is (a) new to or rare in cultivation in the Northern Hemisphere, or (b) an unusual size or color in its species (e.g., pink *Gentiana asclepiadea* or 4-cm tall *Campanula rotundifolia*).

The column 'Authority/Reference' should be used if you believe the item is new to cultivation and has not previously been listed in the Seed Exchange; a very brief citation such as "Fl. USSR" or "Smith 1996" is adequate. If you are submitting an item under a very recently revised name, it is also helpful to cite the source.

### **What to Send**

The most frequently ordered items in the Seed Exchange are small, highly ornamental alpine plants, especially those collected in the wild. Very unusual items, especially from temperate climates, are also much desired. There is also a certain demand for easily grown garden standards. American members in particular are urged to collect more seed of specifically alpine plants in the wild.



ticular are urged to collect more seed of specifically alpine plants in the wild.

#### ★ **What Not to Send**

Although the Seed Exchange is charged to include "plants suitable for rock gardens," in practice it offers opportunities to obtain unusual plants of many kinds. However, certain items are not desirable; some of these will be discarded if received, and others will simply cause useless work and be discarded after orders are filled. In general, the following kinds of plants should not be sent to the Seed Exchange:

- Common trees and large shrubs, unless wild collected;
- Annuals available from commercial seed catalogs;
- Plants taller than 1 meter requiring frost-free culture;
- Horticultural hybrids of common groups such as *Heimerocallis*, *Hosta*; or bearded iris
- Wild-collected seed of federally listed or CITES listed endangered species;
- Aquatic plants;
- Food plants of little ornamental value;
- Seed of any species of *Lathyrus* from outside the USA (agriculturally quarantine);
- Plants prohibited from distribution by the US Department of Agriculture (will be discarded if received);
- Large quantities of seed of large plants such as Clematis, Eryngium or Eupatorium.

#### **Send Seed Donations and Correspondence Regarding Donations and Catalog to:**

NARGS Seed Exchange  
PO Box 7803, Estacada, OR 97023

#### **Send General Comments and Administrative Correspondence to:**

Carole Wilder, Seed Exchange Director  
221 West 9th St., Hastings, MN 55033

#### **E-Mail**

Direct questions about submitting seed to the Intake Manager:

[jmccgary@cnw.net](mailto:jmccgary@cnw.net)

Do not submit your donation list by e-mail; it must accompany the actual seed. Requests will NOT be accepted via e-mail.

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# TECHNO-GARDENING

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## Rock Gardening on the Internet

The NARGS Website provides great benefits to members with on-line computer capability. You can get instructive "Plant of the Month" features, see information on upcoming (and past) Annual Meetings and Winter Study Weekends, as well as gather material on activities at the chapter level. You can also submit "Beginner's Questions" to be answered by NARGS experts, scan the listings of rentable NARGS video and slide shows, and browse the virtual aisles of the Society's Bookstore.

The site also serves as a gateway to the vast botanical riches available online throughout the world. The Links page gives you a map to scores of sites that can enrich your gardening experience...or let you waste a few hours in horticultural daydreaming.

Three key starting points are a trio of catch-all sites:

- The Internet Directory of Botany (IDB) is an academic link to thousands of serious botanical sites around the world.
- GardenNet is a more horticulturally oriented site, targeted for gardeners.
- Scott's Botanical Link offers many of the same links as the IDB but packaged differently.

Browsing through these constantly updated sites will show you the enormous breadth of interesting and usable information available all over the net.

The NARGS web site provides you direct links (via mouse click) with a range of fascinating sites:

Several of our sister groups in rock gardening maintain web sites, including the UK Alpine Garden Society and the Scottish Rock Garden Club.

Many groups devoted to individual genera maintain photo-filled websites to promote their favorites. You'll find sites for *Arisaema*, cacti, conifers, *Dianthus*, ferns, *Geranium*, heathers, *Hepatica*, *Penstemon*, *Rhododendron*, and *Sedum*. No doubt many others will reveal themselves to the diligent Internet searcher.

A few native plant societies have put together valuable sites, sharing local familiarity with the native flora. The states of Arizona, California, New Mexico, Oregon, and Washington have a web presence particularly fruitful for NARGS members.

The NARGS web site also provides direct links to about a half-dozen botanic gardens with sites of value to rock gardeners, as well as links to a number of selected nursery and seed sites. You can even get an electronic



version of the current 5,500-item NARGS Seedlist.

In a general interest area, the NARGS links page provides many fascinating things, from flora of distant lands to a seed germination database, from the Harvard herbaria to the Time-Life Gardening Encyclopedia.

Finally, you'll find instant connections to electronic mailing lists. You subscribe to such a list electronically, and you then receive copies of all messages sent by members of the list to each other. The Alpine-L list, for example, provides perhaps a dozen messages a day solely on matters of interest to rock gardeners. You get a chance to contribute your knowledge—or just watch as others from around the world discuss their luck at flowering alpine rarities or argue the baroque germination requirements of *Trillium* species.

If you've stayed away from using your computer to expand your gardening skills and knowledge, you're making a mistake. There's lots to see and learn, far more than you might imagine. Visit the NARGS website to get started: [www.nargs.org](http://www.nargs.org).

—Jack Ferreri

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## Musings from a Rock Garden

# TRAVELS

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*For most ordinary people, the initial preparation for holiday travel means answering two basic questions: Where? and When? But a rock gardener, being far from ordinary in more ways than one, cries out: "What am I going to do with my rock garden?" Some 70 years ago, the great Czech writer Karel Capek dissected this question in such a masterly and hilarious way (read the chapter entitled "The Gardener's August" in *The Gardener's Year*, George Allen & Unwin, London, 1931) that I wouldn't dare to imitate him. Suffice here to say that the usual solutions, e.g., unsuspecting friends or relatives functioning as temporary ground keepers, are seldom satisfactory. But let us now assume that this problem has been solved in one way or another, and that the prospective traveller can tackle the first of the two initially posed questions.*

*Because for the ardent rock gardener, holiday travel means unequivocally mountains and their plants, the selection narrows down to a limited, but still quite large number of geographic regions in both hemispheres. For North Americans and Europeans, the mountains of the Southern Hemisphere should be especially attractive, because in addition to containing many wonderful and unusual plants, they can be visited between December and February, in the dead of northern winter.*

*Certain intrepid rock gardeners, once they hit the road, tend to exhibit distinctly masochistic tendencies. Regardless of the weather, they sleep in the open, climb the*

steepest slopes, subsist on berries and roots, and wander for days in uncharted wilderness. Some of my Czech friends even got robbed by Albanian bandits and were arrested (the rock gardeners, not the bandits) by the local military authorities. Although these fearless plant hunters deserve much respect and some of them our deepest gratitude for introducing to our rock gardens many of its loveliest plants, I suspect that a sizable number of rock gardeners prefer a much softer approach to plant hunting—one might say they'd rather have their steak on a plate than on the hoof. Fortunately, for those who love to travel and hate to suffer, for whom the northern winters seem longer and less tolerable every year, and who are reluctant to desert their rock gardens during the growing season, there is a solution: visit the Southern Hemisphere in January. The following is a brief account of three locations that I can recommend from personal experience.

### *New Zealand*

Usually, the South Island, the somewhat colder part of New Zealand, is considered the best place to see the fabled alpinists of this part of the world. Like a string of pearls, the mighty Southern Alps form its backbone, and almost anywhere, at elevations above treeline (1,100–1,300 m), the mountain slopes are adorned by choice species that have been the desire and frequently the heartbreak of rock gardeners in North America and Europe. No strenuous mountain climbing is required to visit many of these places and fairly short (2–3 hours) car rides from Christchurch or Dunedin, the two large cities on the east coast of South Island, will bring you some of the choicest areas.

However, my selection for those who enjoy comfort and convenience lies elsewhere. The North Island has no large mountain chains and its climate is predominantly subtropical. Nevertheless, the Tongariro National Park, located in the island's center, is a wild, volcanic area with several peaks, some of them active, ranging from 2,000–2,800 m. On the slope of Volcano Ruapehu (2,797 m) stands a large, charming, and somewhat old-fashioned hotel, The Grand Chateau, and from there a short drive or a bit longer walk on a paved highway leads to a ski area bespeckled with most of the New Zealand alpinists you have always wanted to see. The famous vegetable sheep (*Raoulia rubra*), north-island edelweiss (*Leucogenes*, *Leontopodium*), and uncounted species of *Celmisia*, *Hebe*, *Aciphylla*, *Gaultheria*, *Acaena*, *Dracophyllum*, *Helichrysum*, *Ranunculus*, and *Wahlenbergia*, just to mention some of the larger genera, grow on seemingly desolate, brown-black lava fields, and most will be encountered on a leisurely, two-hour walk.

When you finally straighten up and look around, you'll see not far away another black volcano, whose real-life eruption was watched by the guests in the Grand Chateau only a few decades ago. This account should not detract any New Zealand visitor from the beauty and mountain lure of the South Island. There the variety of alpinists is several times larger than in the north with southern vegetable sheep (*Raoulia* and *Haastia* species) and edelweiss (*Leucogenes* species) abounding.

### *Chile*

This spaghetti-like country, seldom over 200 km wide but 4,300 km long, reaches from Pacific Ocean shores to lofty glaciers exceeding 6,000 m. Alpine regions can be



found along its entire length, and there are considerable differences between the southern and northern Chilean flora. Distinct from New Zealand, where almost any alpine area yields a good cross section of plant genera and species, no such place seems to exist in Chile. However, for rock gardeners who want to visit this country in December or January, there is an alternative: one of the snow-capped volcanoes in the South, generally known as the Lake Country. From my very limited experience I suggest the Vulcan Llaima (3,125 m), because there is fairly good road leading to its slope and reaching an elevation of about 2,000 m. The Internet at <http://www-imk.physik.uni-karlsruhe.de/~muehr/Berge/Be04721.html> offers a good picture and several other links to this one of the largest and most active Chilean volcanoes. Evidently, none of the Internet links were prepared by a rock gardener, as they don't mention that its slopes beginning right at the brand new ski lodge, Club de Campo, are one immense scree garden. *Baccharis*, *Calandrinia*, *Mutisia*, *Perezia*, *Pernettya*, *Rhodophiala*, *Rubus*, at least two species of rosulate violets, and many other cushion plants are embedded in the volcanic ash, one next to another. Although pleasant accommodations are presumably available right at the edge of the screes on the volcano and in the nearby Pucon Village, our party stayed in a hotel in Temuco, a nice town some 80 km away.

### South Africa

For rock gardeners, the pearl of South Africa is the Drakensberg Mountains, a gigantic, uplifted plateau that includes a large part of the kingdom of Lesotho. The most striking feature of this unusual formation is an almost complete absence of prominent, snow-covered, sharp peaks, and the general scarcity of trees on the emerald-green mountain slopes. The mountain-climbing variety of rock gardeners might enjoy the challenge of the plateau's dizzying escarpments, but for those who not only like a cake but also the eating thereof, there is the Sani Pass Hotel. Located in a beautiful, eternally green valley, at the mouth of the only accessible mountain pass in the southern Drakensbergs, this is the place for contemplating the beauties of nature in all comfort. However, because its 1,600-m elevation is more subtropical than sub-alpine, a short (30 km) but somewhat hair-raising drive in a four-wheel-drive vehicle will be required to bring the visitor up the Sani Pass to the edge of Lesotho (2,900 m) and to a rock gardener's paradise.

In the past four years, the Drakensbergs and its alpine flora have been described in excellent, well-illustrated articles in the *Rock Garden Quarterly* by Panayoti Kelaidis (52[3]:pp. 185–204; 53[1]:pp. 33–58; 55[1]:pp. 31–46, [2]:pp. 123–130, [3]:pp. 163–166) and Dick Bartlett (55[4]:pp. 257–62). All I can add to their glowing descriptions is a brief contemplation of *Helichrysum milfordiae* pressed into a vertical crevice on a bleak, desolate hill, 3,400 m high in Lesotho. There was a brief shower a while ago, the fast-moving clouds opened up the blue skies above, and the sun revealed and sharpened the intense colors of lichens that covered the stony outcrops. The fat, pearly-white buds with large spots of crimson sat on short stems in silver, tight foliage rosettes and within a few minutes, warmed by the intense sunlight, began to open up, producing immaculately white daisies with beige centers. The entire cushion, that may have been decades old, was now a glistening network of petals sprinkled by iridescent balls of water. A paradise, indeed.

—Alexej Borkovec

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# BOOK REVIEWS

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*Rock Gardens: A Practical Handbook for North American Gardeners*, by Anne Halpin and Robert Bartolomei. 1997. Clarkson Potter: New York. 192 pages, \$23. ISBN 0-609-80087-6.

Anne Halpin's writing is clear and unmannered; she is the author of many gardening books. The content of this volume is the product of Bob Bartolomei, whose work as curator of the T.H. Everett Rock Garden at the New York Botanical Garden is well known and highly regarded.

This beginner's guide has a good start: "Rock gardens are often described as the realm of the plant obsessed." Yes, that's us, and then a few pages later: "Rock gardening is for gardeners who simply love plants, who become fascinated by their subtle differences of form and habit, beguiled by the beauties of petal and leaf, enthralled by each unique combination of texture and shape." These are the right adjectives.

But what won me over entirely were the lines near the end of Chapter 1, The Rock Garden Defined. "Rock garden plants may be annual or perennial, shrubby or herbaceous, easy to grow or challenging. Good plants for rock gardens include dwarf conifers, small shrubs and trees, ferns, small perennials and wildflowers, ground covers, bulbs, and, of course, alpines." This straightforward prose is an all-inclusive definition that will incense some old hands. Just what we need, I say, appropriate reassurance for the newcomer. In time many will develop their own prejudices anyway, but why start off as an intransigent? The Society itself has never been able to define rock gardening. Our committee-produced constitution is mealy-mouthed on the subject, and this lack of agreement, of focus, of purpose has paralyzed us more than once.

But I'll get off the hobby horse. Every significant aspect of rock gardening is given some space here. There are discussions of soils, screes, walls, propagation, design, alpine meadows, troughs, sand beds, materials, paths, pruning, resuscitating cushions. Troughs are our most important product, and simple, detailed instructions on making one are included. Here is another area where apoplexy may be induced in the opinionated reader. There is a list of 75 appropriate plants with cultural hints for each. I liked the emphasis on thoughtful adaptation to local climate, and the long interview with Baldassare Mineo about how Medford, Oregon, differs from the Bronx, New York.

The illustrations are a major asset, usually excellent, even voluptuous, and well-captioned. I didn't sit down to count them but wouldn't be surprised if there are 200. I found few typos and no errors of any consequence. The book is opinionated and refreshing, a fine introduction, superior to its competitors. Whether you are new to the rock garden game, or you have a friend who's new, this makes a great gift.

—Tom Stuart



Case, Frederick W. and Roberta B. Case. 1997. *Trilliums*. Timber Press: Portland Oregon. 285 pp., \$29.95, plus \$5.50 shipping & handling. ISBN 0-88192-374-5.

The genus *Trillium* may best be described in superlatives. It may be the most widely known spring wildflower and garden treasure in eastern North America, maybe even in the world. I have never met a rock gardener who didn't want to grow trilliums and know more about them. There are many species: some 35 in eastern North America, 7 in western North America, and 6 in eastern Asia. All are interesting and worth growing; yet the genus may be the most misunderstood and misidentified of our showy spring wildflowers.

Much has been written about trilliums in the horticultural world; relatively little in the botanical profession. Barksdale, Freeman, and Patrick are the only names regularly associated with the (piecemeal) taxonomy of trilliums in the United States—since 1938! While everyone knows there are the pedunculate (stalked flowers) ones and the sessile ones, not everyone can sort out the similar species that form complexes across eastern United States. Why have we avoided these intriguing plants? Are they too difficult to identify accurately? Do they blur into an endless array of forms that seem to not have recognizable habitat associations? Are we afraid the ones for sale are all wild-collected, and the species will be depleted? Does picking them once kill them as we have long been told?

The answers to these and other mysteries about trilliums had to wait for a superlative team to finally tackle the enigma. Fred and Roberta Case are no strangers to difficult problems. They have written model books on orchids and wildflowers, have published pioneering papers on *Sarracenia* pitcher plants and trilliums, have delivered many lectures on hard-to-grow alpinists, and have continuously sought out American plants of horticultural interest. They have studied trilliums for over 40 years, have seen all the North American species in the wild, and have grown them all in their experimental garden in Michigan. Probably no single person has so much intimate knowledge of our trilliums who at the same time could compile such a useful a taxonomic treatment so clearly written and inspiring—this book ought to win a Pulitzer Prize in botany.

While not a technical revision, the present volume is best described as a complete guide for the field botanist and interested horticulturist. It is especially ideal for rock gardeners of all ranks. The book includes an excellent key to all 48 species that is uniquely illustrated with thumbnail-size line drawings to help with difficult characters as you go along. Each species is then treated separately with a thorough description, including synonymy, common names, habit, habitat, varieties, forms and hybrids. While some technical terminology must be employed, the terms are used properly and consistently such that the novice reader may come to learn their meanings. The text is remarkably free of editorial errors, due for the most part to careful proof-reading by the authors. There is a distribution map for each species, as well as one or more outstanding color photos integrated within the text. The appearance, design and feel of the book are superb. It is user-friendly, containing a glossary, bibliography, and index. An introductory chapter describes the general structure, growth, and behavior of trilliums (for example, they will grow back only after a winter chill of the dormant bud). Of great value to members of the NARGS are chapters on horticult-

tural practices, including hybridization and conservation. After seeing the photos of some of the intriguing color forms of garden hybrids, most gardeners will be impatient for the availability of these plants. Some will want to begin the laborious task of creating their own hybrids. The problem of mass production of cultivars and selections will be solved by tissue culture, but it will still not be a particularly rapid process.

Above all, the book is a joy to behold and inspiring to read because each page contains personal observations and experiences. The Cases certainly know their trilliums! Their treatment of the *T. pusillum* and the *T. erectum* complexes make acceptable sense out of intricate relationships. They also explain the identity problem of *T. cernuum* throughout its range. They make us easterners more aware of the western and Asiatic species.

Anyone who has the least interest in native plants will want to own this book—and who doesn't find trilliums appealing? We must congratulate Timber Press for convincing Fred and Roberta to write the text, and for then producing such a beautiful finished product. While there may be much more to know about individual species' ecology, past migrations, chemistry, and pollination biology, etc., at least we have a good key that works. Isn't that always the first step in understanding any complex group? And in this case, it's a superlative step—or might I say it's a superlative Case taking this step!

—T. Lawrence Mellichamp

*The Genus Cypripedium*, by Phillip Cribb, edited by Peter Green. 1997. The Royal Botanic Gardens: Kew, in association with Timber Press: Portland, Oregon. 301 pp., 51 figures (drawings, cladograms); 26 color plates (paintings); 98 color plates (photographs); 22 maps. \$39.95.

Phillip Cribb has continued his work on slipper orchids, following his major work (1987) on the old world tropical slippers, *The Genus Paphiopedilum*. This new work is likely to appeal more to NARGS members, who will hope that the largely boreal and north-temperate lady's slippers, long known as recalcitrant garden plants, can be mastered.

Cast as a botanical monograph, this book carefully lays out the foundations of the classification of the genus in relation to the orchid family and to other slipper orchids, most of which were also originally named *Cypripedium*. The tangles of nomenclature are carefully explained, and modern systematic literature is reviewed. Cribb gives two cladistic analyses (one based on morphology, the other on DNA), which, although not wholly congruent, by and large show agreement as to relationships among the species. Altogether 45 species are recognized (cf. 41 by Cash in 1991), of these only 11 in North America north of Mexico. In considering the yellow lady's slipper group (*C. calceolus* and relatives), Cribb opts for distinct species status for the North American plants, thus requiring the name *C. parviflorum*, with two varieties, *parviflorum* and *pubescens*. He also adopts *C. kentuckiense*, a southern species with larger flowers, in the same group. The disposition of this group has long troubled botanists, but it is clear at least that *C. parviflorum* var. *pubescens* is the easiest hardy lady's slipper to cultivate in North America.



Culture is handled in a separate chapter, written by Holger Perner. Clear directions are given for cultivation, without necessarily implying success. Wherry (in Correll, D.C., *Native Orchids of North America North of Mexico*, Stanford University Press, 1950) stressed that northern species cannot tolerate summer heat, and Cash (*The Slipper Orchids*, Timber Press: Portland, OR, 1991) pointed out that many species are simply not successfully cultivated. Perhaps Europeans, with their maritime climate, have better success than we, with our hot summers. Here in Vermont, yellow lady's slippers are relatively easy to grow, as is *C. reginae*. But I would think long and hard before trying many others, especially given the conservation issues attached. Cribb lays out the state of the art in regard to aseptic culture from seed of this group. A continuing problem is the lack of a proper symbiotic fungus to use. It appears that in spite of progress, we remain distant from the ease of propagation known in *Paphiopedilum*. However, reviewing the photographs, and the rather depressing story of continued depredations from the wild (mostly involving Asian species; our North American taxa, except for some very rare Mexican species, are not on the critical list as yet), we can see a real need for making these species available through micropropagation.

We have come to expect a visual feast in works on orchids, and this book does not disappoint. The paintings (Plates 1–26) are lovely and executed by accomplished botanical artists of yesteryear (Lilian Snelling, Walter Hood Fitch, et al.) and today (Mary Bates, Pandora Sellars, Susie Ray). I also particularly appreciate the reprints of six 16th–18th-century drawings. The photographs (Plates 27–124) are in smaller format but clear, sharp, and diagnostic, altogether of a high quality. Several photos of the North American species are reprinted from Luer (*The Native Orchids of the United States and Canada, excluding Florida*, The New York Botanical Garden, 1975).

It is evident from the above that I like and recommend this book. Its audience will not be the field botanist, for it is not a guide, nor the committed cultivator, for there are not enough "tricks of the trade." I think it will appeal mostly to those of a somewhat botanical leaning.

—Arthur Gilman

*The Gardener's Guide to Growing Penstemons*, by David Way and Peter James. 1998. Timber Press: Portland, Oregon. 160 pp., 55 color photos, 23 line drawings. Hardcover, 7 x 9.5". ISBN 0-88192-424-5.

This "first-ever monograph on penstemons," as the authors promise in the very first paragraph of their *Gardener's Guide*, will quickly rankle the nerves of those of us who have tracked down and photocopied David Keck's meticulous treatments of the various sections of the genus, not to mention those who have accumulated a shelf's worth of the American Penstemon Society's ruminations on all aspects of this extraordinary genus. I was ready to consider the contributions of this book once I recovered from the shock of finding my favorite band of *Cristati*—the gems in the floral crown of a million square miles of the world's most glorious wilderness—reduced to a brief list "all related to *P. jamesii*." Could you imagine a monograph on *Primula* where the *Auricula* section, say, was telescoped into a single sentence?

But as you read between the lines (the American Revolution is gingerly described as "a series of political events that brought war and turmoil for several decades to what is now the USA") you realize that this volume has been written from a different perspective. A technical monograph it is not, but it is a daring and attractive encapsulation of an immense body of horticultural enterprise.

The genus *Penstemon* and its close allies comprise nearly 300 distinct taxa, and that number may eventually be exceeded, since new and utterly novel species are still being discovered in both Mexico and the western United States. But just as tall bearded iris, arising from only a half dozen species of that immense genus, have been taken to amazing extremes of hybridization and elaboration in America, the Europeans have been tinkering and hybridizing penstemons for over a century. James and Way have done a conscientious job of gathering as much information as the literature seems to possess on these gorgeous European hybrids, gleaning enough tidbits and lore from the American Penstemon Society's journals to properly orient anyone who would like to gain a footing with this giant North American genus. Not just die-hard penstemaniacs need this book. The photographs are stunning, and the compendium of cultivar names represents a tremendous outlay of work and organization.

There are chapters devoted to many aspects of the botany, history, diseases and "disorders," as well as general culture of penstemons. I was disappointed that there was no mention of *pittosporum* pit scale, a disfiguring and fatal insect pestilence that has wrought havoc with penstemon growers in many parts of the United States.

Although rock gardens and alpine houses are mentioned in the text sparingly, the the authors' principal focus is obviously the larger penstemons and especially those useful in borders. Prairie gardening is mentioned briefly. Of course, the great bulk of the genus grows in rocky habitats in nature. Most penstemons really need a rock garden setting for cultural reasons, not to mention that they look best among rocks. Those of us who live in semi-arid and arid climates quickly learn that in unwatered gardens penstemons are much longer lived and easier to grow. But "xeriscape" must not have caught on in Britain as it has in the American West. Buy this book, by all means, but what we really need now is a thorough review of the genus, with special reference to the rock garden.

—Panayoti Kelaidis

*Lilies, A Guide for Growers and Collectors*, by Edward Austin McRae. 1998. Timber Press: Portland, Oregon. 392 pp., color photos. Hardcover, 6.5 x 9.5". ISBN 0-88192-410-5.

There are perhaps only a few species of true lilies one could admit into a strict alpine garden (and these—*Lilium nanum*, *Lilium lophophorum*—are far from easy to find or grow), the rock garden in its widest and most poetic sense—including woodland margins and ledges, meadows and perhaps a bog, provides the very best habitat and setting for practically every species of lily under the sun. I should probably come clean and let you know right off the bat that I dote on this genus and aspire to grow every species of lily I possibly can. Of course, most lilies far exceed the decimeter limit for strict horticultural alpenes, but their



spirelike form and midsummer blooming season make them an essential part of the rock garden, in my opinion. The larger rock garden, to be sure. But there are enough miniature lilies (*Lilium bolanderi*, *L. pumilum*, *L. formosanum* v. *pricei*, *L. philadelphicum*, *L. concolor* to name a few) that can fit even into a relatively small garden setting. These and many more are succinctly described in McRae's Guide.

There have been many delightful books on lilies, and there will no doubt be many more in the future. I doubt that any will have the authority and expertise of Edward Austin McRae, who began his career at the Royal Botanic Gardens at Edinburgh, and has spent most of his professional life at Oregon Bulb Farms, the fountainhead of lily hybridization and culture. This 392-page book represents the distillation of a lifetime's passion and work. It is magnificently illustrated with photographs by the author and contains a treasure trove of telling details about not only lilies and their lore but the extraordinary people who discovered them in the wild and have hybridized and popularized this queen of bulbs.

—Panayoti Kelaidis

*The Genus Androsace*, a monograph for gardeners and botanists, by George Smith and Duncan Lowe, edited by Christopher Grey-Wilson 1997. Alpine Garden Publications Limited, Pershore, England. 208 pp., 95 color plates. ISBN 0-900048-67-0.

What an extraordinary era we live in! As a youngster, seeking seed or information about alpine plants, I remember how few nurseries offered wildflowers mail order, and alpines were even harder to obtain. Books? A trickle of the most general gardening books came out each year—a decent monograph was an epochal event.

Nowadays, you can browse the net and find hundreds of nurseries offering the most abstruse plants that you can order instantaneously—not to mention faxes, magazines galore, and every month seems to see the publication of another dozen or so lavishly illustrated masterworks. Seedlists from the far corners of the world make anything you dream of obtainable (once you look up the germination requirements in Deno). It's all simply a matter of weeks or months instead of the ever-receding goal of "some day."

And then a book like *The Genus Androsace* comes along. As alpine enthusiasts, we think we know something about a genus, certainly a genus as important as this. After all, most of us already have Smith and Lowe's first treatment of the genus, which seemed pretty thorough at the time. I suppose a day will come when the Himalayas and Central Asia will yield up enough new androsaces that this book will be superceded. That will surely be some day, because this magnificent production illustrates and maps and treats so many distinct and distinctive species thoroughly that have hitherto been simply ciphers in schematic floras or *Index Kewensis* or dusty herbaria.

Appropriately, perhaps, *Douglasia*, like the Titanic, sank on its way across the ocean—our very androsasoid douglasias are all androsaces in this tome. When you take a gander at *Androsace gmelinii* (which could pass for a strawberry sax-

ifrage), *A. graceae* (with round leaves), or the truly ranunculoid *Androsace dissecta*, you may not think you know so much about the taxonomy after all.

Duncan Lowe's drawings are terse and eloquent. The maps are schematic (as they should be; you can always look up dot maps on the *Flora of China* pages on the web, after all!). The photographs are stunning. What a magnificent monument to George Smith's magnificent life of exploration and study. The Alpine Garden Society is to be congratulated for their finest production yet.

—Panayoti Kelaidis



## NARGS COMING EVENTS

ANNUAL MEETING: Skyrockets and Shooting Stars

July 1–5, Eugene, Oregon

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EASTERN STUDY WEEKEND

January 29–31, 1999 Raleigh-Durham, NC

Piedmont Chapter

WESTERN STUDY WEEKEND

February 26–28 Portland, OR

Columbia-Willamette Chapter

Registrar, Mary Hoffman, Oregon City, OR

ANNUAL MEETING 1999

June 24–27 Banff

Calgary Chapter



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Thank you for all the cheerful, loving, encouraging, amusing, sympathetic and challenging messages that you sent during Norman's illness and especially for the many pages of messages from the people and mice attending the Study Weekend at Toronto,

—Norman Singer and Geoffrey Charlesworth

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## General Titles New to the list:

<i>Gardener's Guide to Growing Irises*</i> , by Geoff Stebbings .....	\$24.00
<i>Gardener's Guide to Growing Ivies*</i> , by Peter Q. Rose.....	\$24.00
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<i>Plant Identification Terminology</i> , by James G. Harris.....	\$14.50
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**More Books by NARGS Members** —the following is an additional listing of some of the books in the NARGS Bookstore which are written by current members of NARGS. See the Bookstore ads in the Winter '98 & Spring '98 *Quarterly* for previous listings. (Any members who have written or edited books appropriate for the Bookstore and wish them to be considered for inclusion, please contact the Bookstore Manager.)

<i>Journal in Thyme*</i> , by Eric Grissell.....	\$20.00
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**SPECIAL NOTE:**

Any titles published by Timber Press, whether on the Bookstore list or not, are available to NARGS members through the Bookstore at 20% off list price. If you wish to receive one of their catalogs, contact them at : 133 S.W. Second Avenue, Portland, OR 97204; 1-800-327-5680; 503-227-3070 fax; orders@timber-press.com.

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