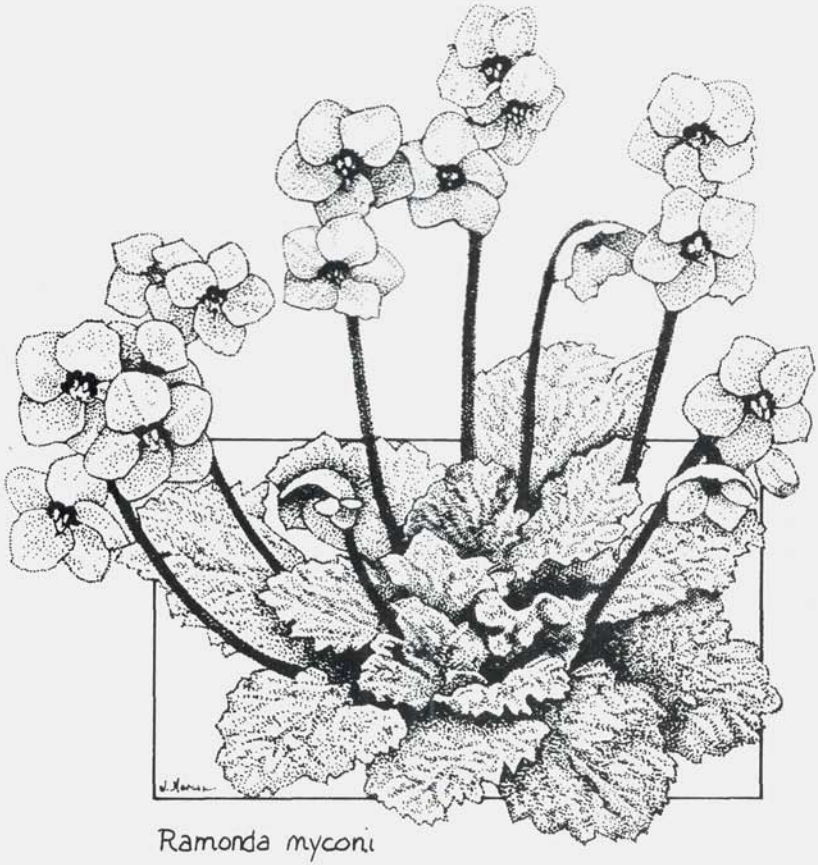
Bulletin of the
American Rock Garden Society



Ramonda myconi

VOL. 45 FALL 1987 NO. 4

CALENDAR OF COMING EVENTS

Eastern Winter Study Weekend (New England Chapter)
Sheraton Tara Hotel . . . . . January 29–31, 1988
Framingham, MA
Western Winter Study Weekend (Western Chapter)
Villa Hotel . . . . . February 26–28, 1988
San Mateo, CA
Annual Meeting (Columbia Willamette Chapter) . . . . . July, 1988

Cover picture: drawing of *Ramonda myconi* by Lisa Moran. (Page 193)

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Bulletin of the American Rock Garden Society

Trillium Ovatum — A Closer Look

Edith Dusek
Graham, Washington

When it comes to rave notices about trilliums, the nod almost always goes to the eastern *Trillium grandiflorum,* a species well suited to the eastern half of the United States but which can be less obliging here on the West Coast. If any mention is made of its western counterpart *T. ovatum,* it is generally to shrug it off as a rather poor stepsister hardly worthy of notice unless perhaps (it is said) one might possibly applaud it for its habit of blooming 2 weeks earlier than *T. grandiflorum.*

Photographs, when available, tend to be of straggly affairs which do little to improve the image of the species. Rarely one hears mention that there is a double flowered form, but one is just as apt to be informed that it does not measure up to the double flowered form of *T. grandiflorum.* As is often the case with such statements, there is a grain of truth in them, for *T. ovatum*

is an extraordinarily variable species. One might be so bold as to state that it is quite the match of *T. grandiflorum* in this department. Just as not all specimens of *T. grandiflorum* are capable of producing the large buxom blossoms that endear them to gardener and photographer alike, so also is *T. ovatum* capable of specimens whose floral capabilities will take a back seat to that of no other species. Both species are known to produce an assortment of double flowered kinds, all quite different in aspect, with some in each species much superior to others.

The 2 week earlier blooming period is indeed accurate at times, but while goodly numbers of *T. ovatum* will have flowered and be thinking in terms of seed long before *T. grandiflorum* ever gets into the mood for opening its blossoms, other specimens will have flowers in various stages of development and some laggards will be just starting to push through the soil. Obviously, whether *T. ovatum* may be said to bloom long before, shortly before, with, or after *T. grandiflorum* will depend very much on the habit of any particular plant. It has been said that regardless of when a plant blooms in its native woods, in the garden all will come to adjust to the same short blooming period. Not having lived in all other gardens and despite the fact that I well realize that this can sometimes be true, I can but relate my own experiences with numerous of these plants, not only in my own garden but also in the wooded area owned by my father for the past several decades. During this period it has been my observation that those plants which flower early do so every year, while those which like to lie abed keep me on edge every season until they finally stir themselves. Actual blooming dates may vary from year to year, but the sequence remains the same. The bloom span extends from early or mid–February to late May or the first weeks of June. No other resident *Trillium* species has so far been able to equal this record.

There are at least two distinct ways by which *T. grandiflorum* and *T. ovatum* may be distinguished from one another. The former seems always to have its leaves well developed before the blossom opens, and the flower has a slender trumpet shape. In contrast, *T. ovatum* is overly eager to open its flower, so much so that the petals will sometimes be well expanded before they have cleared the soil. Inevitably the flower will open well before the leaves are fully developed. Though the flower shape can be variable, it is best described as resembling a shallow open bowl.

Part of the complication in describing *T. ovatum* lies in the fact that each plant has a considerable degree of latitude in its performance. It may spend its whole life span of upwards of three quarters of a century (no one knows for sure its ultimate life expectations) as a single–stemmed plant, producing small or mediocre flowers followed by a few–seeded fruit. Its tenacity and will to survive under what might best be described as marginal conditions is remarkable. If the same plant should be provided with a situation where

it has ample nourishment and moisture, little competition from neighboring plants, and a judicious amount of sun, it will readily develop into a massive clump with a corresponding improvement in the blossoms.

Not every plant is possessed of equal capabilities. In each there is a floor, so to speak, below which the plant is incapable of producing any kind of blossom. On the other side of the coin, there is a point beyond which that particular plant is incapable of further improvement. The disparity between these two points can be considerable. This situation is further complicated by the fact that on the same plant, the flowers will vary in accordance with the age and vigor of the rhizome bud responsible for them. Not only that, but each flower will gain in the length, breadth, and to a minor degree, the shape of the petal between the time the flower opens and the time it has declined.

It may be of interest to digress here a bit and mention that plant height is also subject to the influence of the same external factors as are the blossoms. In contrast to some of the sesiles which will produce miniscule flowers over a vast expanse of leaf, *T. ovatum* is generally inclined to keep all parts in scale. There is in my photo file a picture of a perfect miniature. The plant has been raised so that it is on the same level as another plant in which the blossom is good–sized but by no means exceptional. The leaf span of the miniature plant does not quite match that of the flower span of the larger plant. From time to time I have come upon other such miniature efforts and must say that they do not resemble the tiny *T. hibbersoni* which is claimed by some to be no more than a small version of *T. ovatum.*

The largest flower of *T. ovatum* which I have thus far found had a natural spread of 140 mm. This scarcely classes it as small or mediocre if the mere matter of size is one's criterion of excellence. Large–flowered forms are not particularly uncommon. As in the population as a whole, the length–width ratio of the petals varies widely. Occasionally there are no petals at all, just as in some of the Japanese species. They may be long or short, broad or narrow in any combination. They may be clearly separated all the way to the base or they may be more or less broadly overlapping. The widest portion may occur from near the center to near the base. The so–called drip tip may be quite elongated or much reduced. Obviously all these variations result in a wide array of petal shapes.

Petals are usually equidistant from one another, but sometimes one of the angles between them exceeds the others. This gives the flower a rather carefree windswept effect. Petals may sometimes be quite flat, but more or less ruffling of the edges is not uncommon. At times the ruffling becomes so pronounced that the petal will be folded into one or more pleats. In most cases the petal edges are entire. Less often one finds a flower with one or more of the edges indented to some degree into more or less pronounced

lobes. Although the petals most often are spread into an open bowl shape, an occasional flower may have its petals so reflexed that there is a surprising resemblance to *T. cernuum* or *T. vaseyi.* The effect may be more pronounced if the pedicel is declined so that the flower is carried below the leaf as occasionally happens.

Blossoms are most often described as being white, turning pink in age. This only gives a hint of the performance. Buds are usually white, but it is not uncommon to find them touched with more or less yellow. This color is only rarely carried over into the open flower. Not all flowers will color with age. Those that do may exhibit quite an array of differences. At its best, the color may be a lovely pink or perhaps a deep red whose intensity rivals that of *T. erectum* at its reddest. At their worst, the pinks are marred with a grayish blue resulting in rather disgraceful old rose tones. The colors may be solid. Pinks may have snowflakes of dark red or the dark reds may retain snowflakes of white. Sometimes coloring is restricted to a narrow band in the center of the petals or it may appear only at one or both ends. Those plants which produce deep red in the centers can bear a startling resemblance to *T. undulatum.* Needless to say, they are most attractive.

Pollen is most often deep yellow making a fine contrast to the flower. Less often it will be pale ivory. Those plants which turn deep red in age may also show a similar color in the stamens. Pollen is relatively large grained and tends to cling together in masses. Apparently there is a sticky or waxy substance with it which helps to make it adhere to anything that brushes against the anthers. Any insect becomes liberally daubed with the stuff.

The sepals are as variable in their length-width proportions as are the petals. They may be flat, keeled, or more or less corkscrewed. Although generally green, it is not too unusual to find them variously touched with maroon, especially in the latter stages of flowering. For some curious reason, the length–width ratio seemingly bears little or no relation to that of the petals.

The usually green, unmarked leaves may occasionally turn a deep wine red. More rarely, they are edged with maroon. They may be relatively flat or the edges may be variously waved and ruffled. They are generally sessile in mature plants, but juvenile plants or those not growing under optimum conditions may show a bit of a petiole. Blades may be broad or narrow so that the leaves will either be more or less overlapping or well separated.

Just as the time of emergence varies, so does the time of disappearance. The latter seems to have no relationship to whether the plants flowered or bore seed. To some extent disappearance is governed by the availability of soil moisture, but this is not the only factor. Plants may disappear at any time from late June to mid–November. Under no circumstances should the tops be removed until they have completely ceased functioning.

Not infrequently, next year's shoot will make its appearance above ground

before the old one has retreated. Efforts to cover them over in a mistaken attempt to give winter protection generally results only in the shoot being thrust above the new cover. It rarely comes up more than an inch or so and may remain in its protective wrappings or these may split to show a hint of leaves. Since these are green, it is probable that the plants are capable of at least minor amounts of food production during the milder periods of winter. In any event, this premature partial emergence seems to do the plants no harm unless some careless traveler happens to step on them.

Seeds are frequently freely produced. Provided the plant is in good condition, it seems to do them no harm at all. As with all other aspects of the plants, the shape of the fruit is variable. The seeds are usually greenish when ripe. More rarely there will be indistinct mottlings of purplish on green. Ridging is usually pronounced, sometimes giving an almost wing–like effect; however, it may be almost completely absent. The usually prominent and fleshy stigmatic remains are sometimes completely absent. The outline of the fruit is usually long oval, but it may be roundly triangular or widest at the middle.

There is said to be no formation of abscission layers to aid in the opening of the fruit, but as they ripen there is a thinning of the fruit wall on three longitudinal lines. Shortly before splitting takes place, the seeds become more or less visible along these lines. It seems probable that fruits take on considerable amounts of moisture in the final stages of ripening and that the hydraulic pressure so engendered is responsible for the splitting of the parts. If the fruit wall is damaged, the interior becomes dry instead of moist and the fruit fails to open in its normal fashion. It may then open only along one or two of the lines or it may remain intact and loosen at the base to hang indefinitely or drop from the mechanical action of wind.

Trilliums are said to be possessed of a substance which suppresses the natural development of insects so that there is usually little evidence of insect damage. Slugs have no such prohibitions and can cause considerable damage. Not infrequently, they are the culprits responsible for damage to the fruit as well. It is not clear whether ants will also cut through the wall in their impatience to get at the contents or if they merely take advantage of holes made by the slugs. In any event, each trillium seed comes supplied with a packet of ant attractant which aids in the dissemination of the seeds. It is a curious fact that in larger fruits, there seem not to be a greater number of seeds but simply a larger packet of ant goodies with each seed. In fact, the ant attractant appears to develop to some degree whether all the seeds are fertile or not.

In the past there have been attempts to separate this far–ranging species into an assortment of species and varieties. After examining many of these plants over much of the species' range, I can find little justification for changes in nomenclature. While it is true that plants are exceedingly variable, the same

kinds of variants can be found in most populations. Dry land plants tend to be much more slender and smaller flowered; however, even here it is possible to find plants typical of wetter habitats when individuals or small groups happen to grow in moister, more favorable areas. The reverse is quite true on the moist side of the mountains when individuals strive to grow under less than favorable conditions.

In the Trinity Alps there is a population which has been designated as *T. ovatum oettingeri.* Unfortunately, I have not yet seen these plants nor do I know if any attempt has been made to discover whether or not the peculiarities displayed by these plants are maintained if the plants are grown over a period of years in a different environment from that in which they normally grow. In the long run, this would be the only way to ascertain whether or not the plants are deserving of recognition in their own right.

As previously stated, the small *T. hibbersonii* (called *T. ovatum* f. *hibbersonii*) has a number of idiocyncracies which definitely separate it from *T. ovatum.* As a garden plant, it maintains those traits which brought it attention in the wild. In stature it is small, generally much smaller even than the dwarfed forms of *T. ovatum.* Unlike that species which has flowers that open white and turn pink in age, the flowers of *T. hibbersonii* open pink and the color tends to lessen as the flower ages. Stamen connectives are definitely deep pink in contrast to the white or greenish ones of *T. ovatum.* The fruit shape is distinctive in that the sides are virtually perpendicular, with the ridging confined to the top. The result looks astonishingly like a minute bishop's cap. With all of the variations I have seen in *T. ovatum,* I have yet to come across one of such an unusual shape. Moreover, the fruit color is nearly white, not green. The contents are very dry–mealy, much like the similarly colored but quite differently shaped fruits of *T. rivale.*

In addition to being a very small plant, *T. hibbersonii* has a peculiarly shortened season. Although it is a relatively early riser, it ripens its fruit and disappears noticeably sooner than any plant of *T. ovatum* that happens to coincide with its flowering. The tiny dry fruits ripen with dramatic suddenness, falling away at the base without the lateral splitting found in *T. ovatum.* Despite all of the dissimilarities, recent chemical studies indicate a close relationship between *T. hibbersonii* and *T. ovatum.*

In the Beginning:

Small Successes

Ann Lovejoy
Seattle, Washington

New to the delights of rock plants, enthusiastic gardeners join the ARGS, attend meetings, and visit a few gardens. After seeing slides of what experienced gardeners have wrought, we rush home, rip out most or all of our turf and replace it with incipient alpine meadows, a scree, or a model peat bog. After a great deal of work, and the outlay of a considerable amount of cash, we sit back and gaze at our handiwork. Dotted about a seemingly enormous landscape, a handful of rare and choice rock plants make their stand. All are carefully chosen for slow development, tight habit, precious smallness; we know we selected the right stuff, but why didn't these things GROW?

A new rock garden can look a little bleak. Fortunately, there are a number of plants that can safely be introduced to soften such a raw landscape. All of the following will quickly make a good effect without overrunning your precious tortoises. Even the rowdiest are easily controlled, and all will reward your efforts generously and soon. As your choice rarities mature, you can replace these eager youngsters—but don't be surprised to see them persisting in some mature and sophisticated gardens. Some very easy plants are too lovely to do without, common or no.

While you are waiting for your perennials to mature, why not have recourse to a few dainty annuals? If you have a sunny and empty pathway or a sloping bed of infant subshrubs, try sprinkling the area with stardust. That is the common name of *Leptosiphon hybridus,* an obscure member of the Polemoniaceae sometimes classified as *Gilia* x *hybrida.*

This little creature rarely exceeds 3 or 4 inches in height and consists of little feathery bursts of fresh green thread–like foliage spangled with minute star flowers in cream, white, pink, rose, yellow, and gold, all with a central disk of tufted orange silk. A pinch of seed, scattered every 3 weeks, produces these tiny flowers from late spring through early fall. Native to California, this unassuming plant had to go to Europe to be appreciated. French charm school did wonders for it; now much hybridized, and frequently grown throughout Europe, it deserves a warm welcome back to its native shores. In a mild year, leptosiphon reseeds in my garden, where it is scattered between paving stones and among mats of creeping thymes and veronicas.

It seems to prefer a rather rich yet gravelly soil in full sun—or as full sun as Seattle can claim.

Another delicate annual which frequently reseeds is *Ionopsidium acaule,* the violet cress. This one prefers shade, from which it may emerge into the sun, but it won't settle down satisfactorily unless given a cool, shady starting place, perhaps between bricks or flag stones. Once established, the tiny flowers of dusky violet are open nearly year round. They are typical crucifer blossoms, little four-petaled things, dainty looking but tough as nails. The small leaves are rounded, much like a miniature water cress, and of a deep, fresh green. The whole plant is under 3 inches in height. In one exceptional (and unplanned) partnering, the ionopsidium sowed itself into the arms of *Pimelea prostrata* var. *coarctata.* This ever-gray shrublet has brown wiry branchlets covered with alternating pairs of opposite leaves, blue-gray on cherry-red stalks. It forms a flat mat several feet wide and under an inch tall. In May, the scent of its tubular white flowers explains the garden name of New Zealand daphne. These flowers become minute berries, pearly little peppercorns, in the fall. The violet ionopsidium flowers are lovely among those silvery leaves in every season.

To cover larger areas, there are any number of creeping thymes, many found in the most sophisticated gardens as well as in the youngest, and rightly so. Where drainage is poor, it is worth digging some coarse builder's sand into the soil to improve the texture. These sun-loving Mediterraneans will show their appreciation in long and outstanding performances.

Thymus serpyllum varieties will quickly form thick, smooth carpets. They are of a particularly rich green, and although evergreen, they seldom get wind burned as so many "finer" thymes do. The flowers may be rosy, white, pink, or lavender, and depending on form, may bloom briefly and shyly or long and hard, so it is worth paying a bit more for a proven, named variety.

The woolly gray mats of *doerfleri, T. hirsutus,* and others all have pinkish flowers of varying intensity. These are pleasant edge softeners for paths and make textured patterns when mixed into green thyme carpets. Thymes take a fair amount of foot traffic, and most are well-placed among paving stones. Established mats make wonderful breeding grounds for seed of certain rather difficult plants; clematis, meconopsis, primroses, astrantias, all seem to like a nursery bed of thyme. One of the delights of winter gardening in mild areas is weeding through the thyme beds; the various scents come thick and fast, pungent on the chilly air. Weeds pull out easily from the rain-softened soil, and among the raggedy volunteer seedlings, there are always a few treasures.

To add a bit of height without undue weight, consider some fine and well-mannered grasses. I love the sweeping curves of the carexes, sedges which have garden impact even when quite young. Not true grasses, they bring the same kind of airy grace to the garden. Thoughtfully placed and given

appropriate conditions, they have a lovely presence for many months. These sedges spread slowly but politely, the thickening tufts remaining right where you put them. *Carex buchanani,* the leatherleaf sedge, has delicious caramel curves, each slender grassy leaf edged with coiling threads of copper and bronze. In winter, they take on pink and gold tints, especially lovely in the snow. This reaches about 12 inches and spreads as much as 6 or 8 inches across in time. A lovely cousin *C. morrowii* is similar, its curls a strong, rich green. There is a very attractive variegated form, *C. morrowii* 'Variegata' with ivory-edged blades. All take sun or partial shade with equanimity, spreading most quickly in a rich, fast-draining soil.

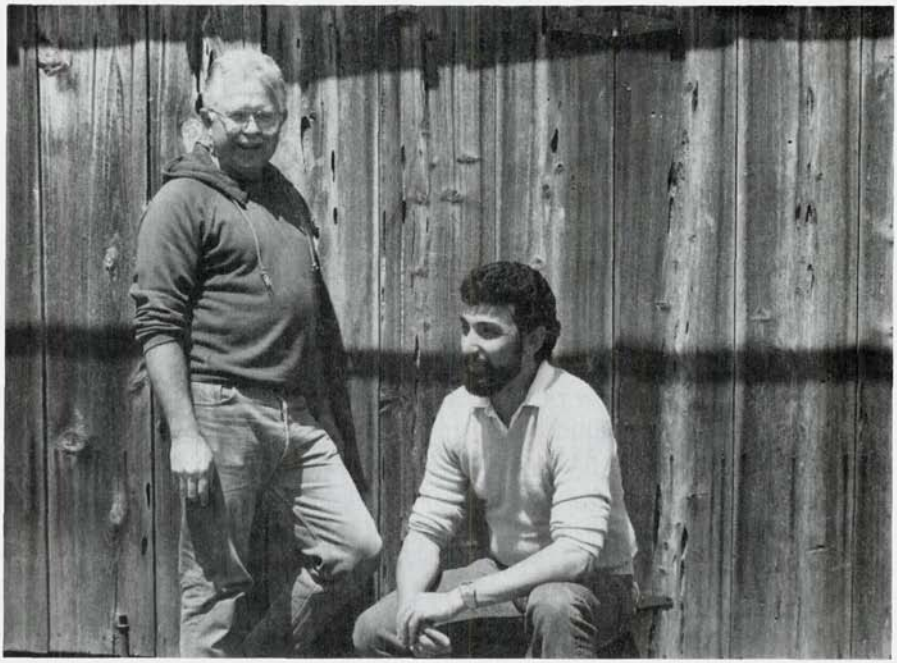
A true grass which has recently appeared on the garden scene is *Imperata cylindrica rubra,* the Japanese blood grass. This stunning plant is quite hardy, even in cold winter areas, needing only a loose protection of branches during the coldest months. In good garden soil, it fattens up fast into plump tussocks of ruddy leaves, 12 or 14 inches tall. The base of the plant is deep green, stippled with caramel and a purplish red that increases until the upper portion of each leaf-blade is a strong, clear crimson. This showy grass enlivens plantings of flat creepers and subshrubs. A few clumps will zip up a group of prostrate junipers no end. And mixed in with a sweep of the satin-black *Ophiopogon planiscapus* 'Arabicus' ('Nigrescens'), it is a definite crowd pleaser, beautiful for most of the year.

These grasses are wonderful fillers for those blank expanses in newer gardens and are displayed to advantage when each clump is set several feet apart. Spread a welcome mat or two of thyme, spangle the empty places with the tiny stars of leptosiphon, enhance the promising young landscape with fountains of blood grass. Soon, you won't be waiting impatiently for your garden to mature. There will be plenty to admire and appreciate, with more good things on the way. It's crucial to look ahead and plant those slow-growing treasures for the garden of the future, but it's also well worth treating yourself to a few ephemeral, questionably lesser delights to bring you pleasure nearly at once.

Award Winners

The Marcel LePiniec Award, 1987

Jerry Cobb Colley and Baldassare Mineo



Jerry Cobb Colley and Baldassare Mineo

Since 1969 it has been the privilege of the American Rock Garden Society to award annually to a person who, as nurseryman, propagator, hybridizer, or plant explorer, is currently and actively engaged in extending and enriching the plant material available to American rock gardeners. This may be a joint award if two people have worked closely together. The recipient need not be a member of the Society.

The Society in turn has been enriched by these recipients beyond measure. The Awards Committee this year is very proud and very happy to be able to nominate and award Baldassare Mineo and Jerry Cobb Colley for this award.

Jerry was born in Kentucky, went to school in Kentucky and Michigan

State, and has a degree in horticulture.

Baldassare was born in San Bernardino, California, went to Cal State Polytechnic University, and has degrees in architecture and environmental design.

Both men have been knowledgeable in horticulture from the time they were very young. They teamed up in San Luis Obispo and had a nursery growing and wholesaling perennials. On a combination business and pleasure trip to Oregon in 1977 they met Boyd Kline and Lawrence Crocker, the founders of Siskiyou Rare Plant Nursery and the recipients of the very first LePiniec Award in 1969.

Thankfully for all of us they bought and continued and expanded Siskiyou Rare Plant Nursery. Most of you can hardly want for their magnificent catalog with in excess of 1000 varieties of plants, and it is with trembling fingers that you write your checks for your orders to be shipped.

There is, however, a treat that far exceeds the catalog. This is a visit to the tremendously expanded nursery in Medford, Oregon. In row after row, alphabetically by plant name, are the legendary and the common growing with vigor—plants that you only dreamed of seeing, let alone owning, and they are there for the asking. You spend hours browsing and making your selection.

So we now have at our disposal the premier alpine and rock garden nursery in North America. How lucky we are that these two men have formed a team and have brought rock gardening to an unprecedented place on the American scene.

Our most sincere congratulations for a job so superbly well done.

— Lee M. Raden

Award of Merit, 1987

Joan Sanders Banfield

Joan Sanders Banfield, known to all as Jo, is a Founding Member, former chairwoman, gardening guru, and benevolent "power behind the throne" of the Potomac Valley Chapter. Knowledgeable not only in rock garden plants, but also in bog plants, broadleaf evergreens, and wildflowers in general, Jo is one of a select few in the ARGS who have earned advanced degrees in botany. Having already been awarded Bachelor's and Master's degrees in botany, Jo was on her way to a doctorate at Yale when marriage to Bill inter-

Joan Sanders Banfield

rupted her studies. That interruption in no way diminished her interest in plants, rather it refocused those interests on plants of value to the garden.

As a respected plantswoman, Jo enjoys cordial working relations with the staff of the U.S. National Arboretum, an association that has been of considerable benefit to the chapter in particular, and to horticulture in general. As one example, Jo was able to rescue from oblivion two survivors of a new race of dwarf camellias hybridized and selected by Dr. William Ackerman. Rooted cuttings of the two prototypes were shared with eager chapter members. When the horticulture trade, and for reasons beyond comprehension, the American Camellia Society showed no interest in the little gems, the USNA management decreed that the entire lot be discarded.

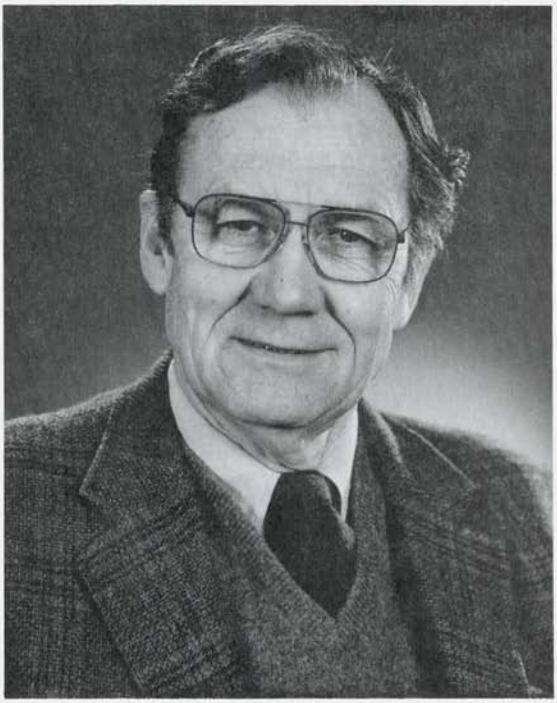
Jo, along with Betsie Kinney, was the principal driving force behind the preparations for the 1978 Eastern Winter Study Weekend hosted by the chapter. In addition she assumed a responsibility second only to Lynn Makela's for the repeat performance put on in 1983. Jo is dedicated to introducing others to the delights of rock gardening. Her slide talks to outside groups, presented with contagious enthusiasm are, in large part, responsible for a doubling of the chapter membership over the past 10 years, and with it a doubling of the number of chapter members enrolled in the American Rock Garden Society. Above all, Jo remains one of the first members of the

chapter to be called upon by the officers when problems arise. They can rest assured that she will go about their solutions thoughtfully and spare neither time nor effort.

— George Phair

Award of Merit, 1987

Harry Butler



Harry Butler

Harry is a "lad of the soil," growing up on a southern Illinois farm. He earned a degree in botany from the University of Illinois, which he has used ever since, growing, writing, broadcasting, and lecturing. While serving in the U.S. Navy Air Force during World War II, he worked in communications. As Farm and Garden Editor at WHIO Radio and TV in Dayton, Ohio, he hosts

a Saturday morning urban and suburban program covering all phases of gardening.

Harry has devoted a good part of his adult life to ARGS. He was a moving force in organizing the Great Lakes and Ohio Valley chapters, served as chairman of both, and was president of the national organization from 1972 to 1976. Harry's enthusiasm and talent for teaching is a rare quality. It's been said, "He leads rather than teaches." He will travel miles to share his slides and knowledge of rock plants with all types of organizations, answering a million questions with unquenchable enthusiasm.

Both Wegerzyn Garden Center and Cox Arboretum in Dayton have felt his support, through guided tours, classes, lectures, and committee work. And Cox recently acknowledged his contributions with an Honorary Horticultural Chair.

Harry and his wife Jean have a lovely home, garden, and woods in Spring Valley, Ohio, near Dayton, where he experiments with all kinds of growing, sharing his plants as readily as he shares his knowledge. Although rock plants are his main interest, his knowledge spills over into all phases of gardening and growing. His mind is a rare botanical bank that we have all called on. Harry is a quiet, modest fellow whose outstanding communicative skills have created wonderful public relations for plants in general and ARGS in particular.

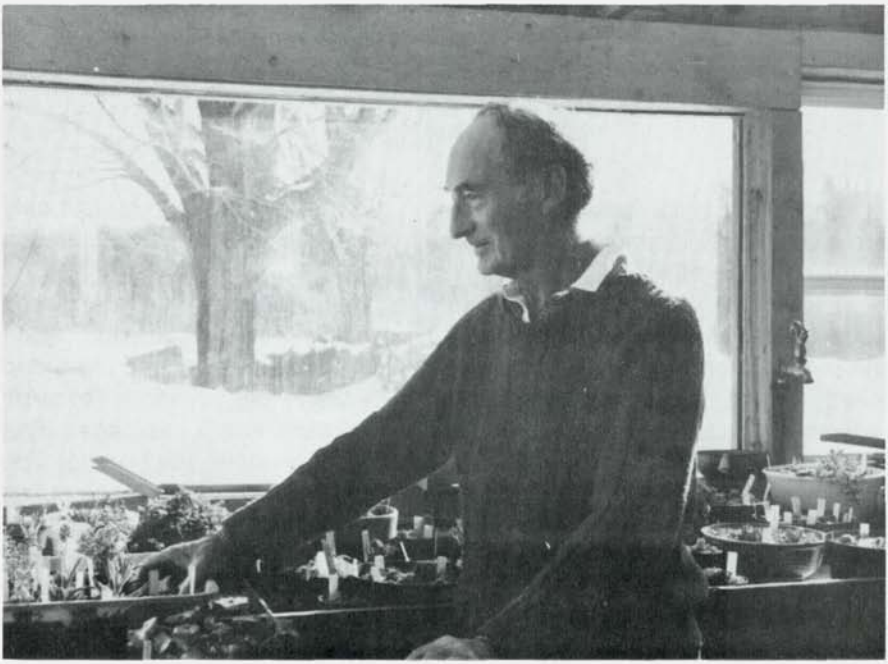
— The Ohio Valley and Great Lakes Gang

Award of Merit, 1987

Geoffrey Charlesworth

Perhaps it is because he was born in England and educated there or perhaps because he was trained as a mathematician and went on to teach in that arcane field, that Geoffrey Charlesworth has become a superb plantsman and is on the doorstep of becoming a published author in the field of horticulture.*

Geoffrey belongs to four different chapters of ARGS and has taken an active role in each, as officer or moving spirit. To each chapter he has been inordinately generous with contributions of plants, as he has been to individuals who visit his varied plantings in South Sandisfield, Massachusetts.



Geoffrey Charlesworth

In that fabulous garden Geoffrey has devised a number of unique planting areas to accommodate a vast range of plants superbly grown. These diverse constructions, all harmoniously woven into the landscape, provide well-planned homes for the thousands of seedlings raised and shared each year in Geoffrey's expertly devised seed-sowing routine.

None of this inventive manipulation of soils and structures is kept secret by Geoffrey. He contributes articles to the publications of each of the chapters with which he is affiliated and to national publications, and he is ever willing to present informative and witty lectures.

For his expert plantsmanship, for his unselfish contributions at every level of the ARGS establishment, and for his eloquent and informative writing about a tremendous range of plants and gardening, the American Rock Garden Society is pleased, indeed, to present this Award of Merit to Geoffrey Charlesworth.

— H. Lincoln Foster

* (Geoffrey Charlesworth's book *The Opinionated Gardener* has been published and is available through the ARGS Bookstore.)

The Bog Garden

Morris West
Red Lion, Maryland

Bog plants have fascinated and intrigued me for many years. Not only are many species which prefer bog conditions beautiful in flower but also in their foliage effect.

The woodland section of our garden has a natural boggy area where large colonies of *Petasites fragrans* and *Symplocarpus foetidus* flourished when the property was acquired. The area was cleared of brambles and unwanted weedy native shrubs and interplanted with *Mertensia virginica, Monarda didyma, Osmunda cinnamomea, Trillium grandiflorum,* and *T. undulatum.* This planting, completed over 10 years ago, has been quite successful. The mertensia and the trilliums, located mainly on a low bank behind the boggiest ground, have sufficient time to display their brief glory before being overwhelmed by their more grandiose neighbors. If the petasites escape early summer hailstorms, the scarlet monarda above the majestic foliage is quite a picture. Except for annual removal of *Impatiens pallida* seedlings and some control of the petasites, the area is maintenance free. However, because of the area's scale and location in high shade, it did little to sate my desire for a real peat bog where more unusual and choice specimens could be grown.

Three years ago an extension to the rock garden provided an opportunity and logical site for a small oval bog about 10 feet by 6 feet in full sun. Previous experience with some small beds lined with 3 mil polyethylene film and filled with 12 inches or so of rich loam had proven successful for the cultivation of such hydrophytic plants as double *Caltha palustris* and *Osmunda regalis.* It was decided that a similar method would be utilized to construct the bog. The selected site was excavated to a depth of approximately 4 feet and lined with thick layers of newspaper to form a smooth surface. Three layers of plastic film were arranged to form as impermeable a liner as possible. Another thick layer of newspaper held in place with small fieldstones was formed. There was an abundant supply of fieldstones from the excavation. Except for a shallow layer of rich humus, the soil consists of about two–thirds fieldstone and one–third heavy clay.

The filling operation was begun by dumping bales of sphagnum peat into the excavation. The original plan had been to fill within 6 inches of the surface with sphagnum peat and top off with richer peat humus (Michigan peat). When 3.5 cubic yards of sphagnum peat wetted and packed failed to make a significant dent in what now seemed a gaping cavity, it became obvious

that the budget had to be greatly expanded *ad hoc* or an alternate method devised. Fortunately a friend who was helping with the project and operating the backhoe remembered that a neighboring farmer had a large pile of well–composted sawdust, which had been used as goat bedding some years before, beside a nearby now–abandoned barn. Arrangements were quickly made to exchange several dump truck loads of the excavated soil from an ample supply of the compost to complete the project. Spent mushroom soil or a similar medium should prove as satisfactory. After topping off with several inches of Michigan peat and a thorough soaking; the edges of the plastic were trimmed and covered over with a layer of gravel from the creek which flows through the property. (The entire rock garden is mulched with this material.) All seemed in readiness for planting.

First to go in at the back of the bog were three small clumps of *Iris sibirica* 'Caesar's Brother' and several dozen seedlings of *Lobelia cardinalis.* Although a smaller iris cultivar or species may have sufficed, 'Caesar's Brother' has proven to be a most congenial friend. The bog medium has allowed the easy removal of sizable clumps to share with friends or use elsewhere in the garden, and the beautiful flowers of spring make way for the attractive summer–fall foliage and fall–winter seed pods giving four seasons of interest. Late summer starts the truly spectacular riot of scarlet produced by the lobelia which seem permanently established by means of side–shoots and seedlings. This show is most welcome, coming as it does when floral display throughout the rock garden is at a minimum.

Other original plantings that have proven successful include two perfect specimens of *Andromeda polifolia* 'Nana Alba' which are starting to produce stolons up to 9 inches long and which I hope to be able to remove and share. A half dozen clumps of *Helonias bullata;* an expanse of *Lysimachia japonica* var. *minutissima;* numerous specimens of *Sarracenia purpurea,* one purchased and many grown from ARGS seed using Linc Foster's recipe; and vigorous ground–hugging *Salix hylematica* and *Vaccinium vitis-idaea* var. *minus* have developed from the original plantings. Live sphagnum used as packing material by one nursery was planted in scattered clumps throughout the bog and is rapidly forming a uniform mat and producing a delightful bonus of numerous plants of *Drosera rotundifolia* from seeds in the moss.

Thriving later additions include a brilliantly colored decumbent form of *Gentiana scabra* (blooming with the cardinal flower), *Tofieldia coccinea* var. *kondoi,* and *Sisyrinchium montanum.* This past season a dozen seedlings of *Trollius acaulis* and three plants of *Primula vialii* were added, but I'm afraid available space is rapidly diminishing.

I knew you would ask. Of course there were failures. *Kalmia polifolia* never really seemed content and expired in its second spring. *Sarracenia leucophylla, S. flava, Darlingtonia californica* and *Mimulus cardinalis* failed

to reappear after one growing season. However, the successes have far outweighed the failures and the entire planting continues to deliver much satisfaction and pleasure.

The Wave Hill Alpine House

Kathie Lippitt
Scotia, New York

It was my privilege to view the Wave Hill Alpine House several Octobers ago. The time was the end of the second day of hurrying and scurrying through books and bulletins, packing them up, driving with my daughter for company down to New York City where everything was unpacked for us by a terrific Hudson Valley Chapter crew. The time was the end of that second day, after having given away every last free bulletin and having sold a handful from the ARGS treasured stock of back issues and having sold many, many books. The time was 8 hours since breakfast, but I had really come to see the Alpine House.

Someone had told me a woman named Janet Reidy was in charge of the Alpine House. Not seeing her, I went in, peering at everything. The things there fell into three classes: the ones I had never seen before, thank goodness there are always those; the ones I had had and lost and those I had and still haven't figured out what to do with; and the two plants that grow better for me than for her: *Centaurium scilloides* (which I have grown for the last 10 years or so and always felt it was a bit cheaty because it did so much better inside close under the lights than outside in the garden where it took all summer some years to warm up) and *Tanacetum (Chrysanthemum) haradjani* (I had excellent clumps that year, but it is an iffy plant and apt to look hideous the next year).

I felt terrible after the impact of those plants. They were so beautifully cared for, in such perfect health, not too fat, not too lean, no spots or worn out leaves or little brown tips. There was the adorable little grass–like acorus I had had such trouble with at home, at Wave Hill flourishing, in perfect health. There were whole rows of some plants such as *Hutchinsia alpina* which I know how to grow and have grown outside, but here they were growing inside—give this gal a plant and she has five.

Now *Hutchinsia alpina* isn't a terribly hard plant to grow, but it is one of

my Cruciferae and I should always have it growing beautifully in my garden. It likes more shade than I have given it. It likes more shade? Why did it leave that spot on the east of the house with just the right shade? Maybe it didn't have enough lime; my garden is so short of lime. The plants I put there in its place were squinchy little things until I put in a new, lovely hutchinsia with a little lime. The squinchies were hutchinsias. I knew that, but no one else could possibly tell. It must have been the way they were grown from seed. And I know how things should be grown from seed. I've done it right many, many times. That was the year I didn't have time to transplant anything when it should have been done. Those poor little things weren't transplanted until 2 years later! No wonder they were squinchy. And the amount of water they had missed out on, sitting there on those side steps where anything can be forgotten. And will be forgotten. At Wave Hill nothing is forgotten. She wouldn't forget.

The Alpine House consisted of benches with one person turn around spots for watering and viewing. The pots were all clay, sitting up to their rims in what I assumed must be a sand, grit, peat composition. Each one was up high enough to see, to look straight in the eye and ask, "Why didn't you do this at my house?" and they all answered, "We tried to. Give us another chance."

I came out practically in tears, mouth open, shouting at the wind which laughed my words away.

It isn't that bad at my house. It can't be that bad. I was angry at me, in tears at my carelessness. I walked down the hill to talk with those who knew, standing below smugly selling their beautiful plants which they raise effortlessly from seed which sows itself on encountering their knowing looks and dares do nothing but germinate and prosper at their command. They didn't have alpine houses. They didn't need them. Everyone in ARGS knows that some people have the word direct from the alpine slopes on what to do with seed of not just one or two species, but with seed of ALL species.

I broke down and was comforted by the kindness of one Ellie Spingarn who has in addition to the Alpine Ear the comforting touch of one who has faced this situation before. We finally got to talking about what I had grown well and then about what I grew better. My two plants. That's why I mentioned them that way. A whole new winter picture opened up to me:

1) I am going to grow alpines well which means I have to be patient and do things right which means careful watering which means mostly don't.
2) I am going to look at my plants and pick the ones that are doing best and spread them around so they will be showing off to best advantage.
3) I am going to put plants that need similar treatment in the same

place. I'm not going to leave a thirsty plant where I will forget to water it when I'm in a hurry. My memory is short and plants are too precious.

4) I am going to transplant seedlings if I have to stay up until 2 a.m. to do it and keep them well watered in spring, but lightly watered if at all after, just the right amount. That's the tough decision. That's where the genius of plant care comes in. Linc Foster says if you are in doubt, don't water. Would the corollary be don't make up for a month's vacation in June by a month's water the first of July?
5) The plants that aren't doing well a) are to be researched to find out what's the matter and to correct it; b) to be abandoned in my compost pile where I am told they grow exquisitely; or c) I will commit merciful floracide.

I wandered over to see the very young girl florist's cyclamen and perennials. Poor thing, that was probably as far as she has gotten in the plant world, but I did want to buy some Culver's root from her. I asked if she belonged to ARGS and she said, "Yes." I told her, just for reassurance, that I had been to see the Alpine House and it was so beautifully cared for, the plants were so lovely, so perfect—and she said, "Thank you."

My shock in meeting Janet Reidy was followed by a game of question and answer, my questions, her answers. These people with ten green fingers and ten green toes and the Alpine Ear are so exceedingly generous they tell all their secrets with the hope that someone will follow in their footsteps. Their secrets are Devotion, Hard Work, Thinking Before Watering Each Time, Fail and Try Again and Again and Again and Again because for every ten to twenty steps backward you are sure to take one forward as I am.

Of Interest From the Chapters:

Composites: Parts II and III

Geoffrey Charlesworth
Sandisfield, Massachusetts

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Part II

This is the second part of a piece about Composites, one of the largest families of flowering plants of interest to gardeners. By dividing the family into tribes, botanists have broken down the family into more manageable related groups. The Aster tribe contains mostly plants with both disk flowers and ray flowers; this is the group that reminds us most of "daisies" (a name from ordinary language that covers a multitude of species). The three genera of the Aster tribe, *Aster, Erigeron,* and *Townsendia,* which are perhaps the most important to rock gardeners, were covered briefly in the first part of this article. I can only mention plants I have grown or plants that are otherwise well known to gardeners, so remember that there are hundreds of good garden plants that will be passed over.

The Rest of the Aster Tribe

The "English daisy" is *Bellis perennis;* this is a weed in Europe and may well be in the United States, but curiously enough does not seem to have escaped in the Northeast. There are forms often cultivated in gardens here, especially the ubiquitous biennial double forms ("monstrosa") that appear in every nursery in April as ready–made color for a new garden or to perk up a border as the bulbs are dying off. They compete with pansies in their role as horticultural stimulant. If you are too proud to put them among your crocus leaves or next to the Red Emperor tulips, you could go for some of the small forms that even look well in a rock garden. Clones such as Rob Roy should be divided in the fall and kept in cold frames until next spring. They look fine with dwarf iris and other small plants that are less exalted than the alpine aristocracy.

A tender near–relative is *Bellium minutum,* which forms a tight mat of shiny green leaves and one–inch high stems with spidery white daisies on top. You could put this plant in a warm place protected from large neighbors,

but with enough room to spread a little. It will be killed over the winter unless kept in the alpine house (a cold frame may not be adequate). If it is kept growing all winter, it will be very tender in April and will not withstand any frost at all, so don't rush it into the garden with the first robin.

There are some yellow daisies in the Aster tribe: the genera *Chrysopsis* and *Heterotheca* seem to be interchangeable. Perhaps *Chrysopsis* is the better name to use. *Chrysopsis villosa* is a variable plant with some good forms. It blooms at the height of the summer with heads an inch across. The leaves are thin and greyish, and the stems slightly woody and dry, so although it can flop around it is less destructive than great mats of lush green foliage. There are some species of *Chrysopsis* from the Southeast United States—*C. mariana* and *C. graminifolia*—and from further north, *C. falcata.* These are a foot or a foot and one-half and need an environment with other medium-sized perennials. My experience with the southern species is limited but I think they are hardy. If you get the daisy bug you will want to collect these plants and enjoy the never-ending variation of form and posture of yellow composites. And you can add *Grindelia integrifolia* to your collection. Grindelias have phyllaries that curl backwards giving the green cup under the flower head a nice ragged look. The plant is aromatic in hot weather and sports common names like resinweed. Also called "rosinweed" is *Guiterrhiza sarothrae,* a roadside plant from Colorado. Here, the individual heads are smaller, but the plant makes a lovely hemispherical dome about one foot across, so has its own charm.

I don't find members of the genus *Solidago* charming at all. I have tried to like them and have planted several special species in the garden. The only effect has been that of a missed weed. I should explain that goldenrod grows in great profusion in the fields around us and no amount of conscious psychologizing enables me to distinguish the invited guest from the handsome prolific weed that threatens to shower my garden every fall with a million unwanted children. You may find *Solidago virgaurea* v. *minutissima* or *S. missouriensis extraria* to your taste, however, as I think I could if I lived in Australia or Ecuador.

Haplopappus is a genus I find slightly baffling. All the listed ones are described as yellow. Of the two I have had any luck with at all, *H. reideri (raidii?)* was pretty and blue and lived only a year; *H. clementis* was yellow, but so like an arnica, I wondered if it was misnamed. Long ago I grew *H. coronopifolius* which had dumpy blue daisies. It, too, "should have been" yellow.

The genus *Brachycome* comes mostly from Australia and Tasmania. *Brachycome iberidifolia* is a well-known annual and seed is sold by the major seed houses. Some of the perennials are worth growing if you are willing to take cuttings over the winter or keep a plant in the alpine house.

Occasionally a plant survives outside.

The last plant of the Aster tribe I shall mention is *Boltonia asteroides,* a large plant covered with small pale daisies. If it is well grown and well placed, it could be a feature at the center of a large island bed. It is a plant for people who would like *Gypsophila paniculata* on an even more extravagant scale.

Sunflowers and Sneezeweeds

There are two other tribes, most of whose members have both ray flowers and disk flowers. We could loosely call the *Helianthus* tribe the sunflowers. Well, certainly *Helianthus* itself is commonly called sunflower, and we are all familiar with the gigantic annual *H. annuus* grown commercially for oil and birdseed, and grown with a passing nod to its decorative value in back-yard vegetable gardens by every male chauvinist gardener in New England. *Helianthus tuberosus* is Jerusalem artichoke. *Helianthus decapetalus* is grown in borders, especially the double form and some of the hybrids.

Heliopsis helianthoides also has many forms for the summer border. I once read a warning against allowing a border to become "yellow sick." You have to resist other people's prejudices. It is too easy to become turned off because some eminent authority is quirky about a plant or a color. However, if your yellow border turns out to be monotonous, you could introduce plenty of white or maybe mauve to cool it down. Or you could go in the other direction and make a really hot combination with reds and oranges. But by all means defend your love of yellow against the present-day equivalents of Misses Jekyll and Sackville West.

Medium-sized perennials are *Coreopsis grandiflora* and *C. auriculata.* Both have plenty of cultivated forms. *Coreopsis auriculata* has ferny foliage and is pretty aggressive, but gives weeks of pleasure. Some of the coreopsis grown from seed are short-lived perennials, but self-sow happily across the border. There are also good clones around which have to be divided fairly often. The annual *Coreopsis* are sometimes called *Calliopsis* and are easily grown, shorter than the perennials, and mostly warm browns and oranges.

Verbesina encelioides and *Viguiera multiflora* are medium-sized yellow daisies for the border that come from the southern Rockies and Mexico. does *Thelesperma filifolium* which resembles single coreopsis but is more graceful.

Ratibida columnaris has an elongated disk, cylindrical in shape (Mexican Hat), and different enough to grow near a rock garden. The gloriosa daisies are *Rudbeckia hirta* and these behave like coreopsis—ineradicable because they have so many seedlings, but you will find that by the time they bloom you really want them. In any case their generous droopy petals of browns, reds and golds are the hallmark of a summer garden and nobody would want

to ban them completely. There is also that familiar giant, *Rudbeckia laciniata,* which New Englanders cherish as 'Golden Glow.' A plant your neighbor will be glad to share and reverently describe as "old-fashioned."

Echinacea purpurea is the cone flower with a spectacular hard cone-shaped disk. The usual color is an unusual dusky red and the albino form ('White Luster') is a special kind of off-white that no other plant has. The white form is not so vigorous.

There are two plants that the rock garden can absorb. *Chrysogonum virginianum* is a well-known, slowly creeping plant that makes a solid mat of green and covers itself with broad-petalled flowers of a rich yellow. There is a taller form less common but not more loveable. *Marshallia grandiflora* ('Barbara's Buttons') is pink and has curiously shaped disk flowers and unusual for this tribe, no ray flowers. It is native to the Eastern US from Pennsylvania to Tennessee. Not an alpine, but you could grow it with *Campanula carpatica* or aquilegias.

Some authors (Gray) place *Marshallia* in the *Helenium* tribe. This tribe has two plants of similar size: *Gaillardia aristata* is also just under a foot in height. It is not as coarse as *G. pulchella,* the mother of several strains of short-lived border perennials and biennials. *Eriophyllum lanatum* is a cheerful vigorous yellow daisy with greyish leaves that is content with part sun.

The tribe takes its name from *Helenium*; *H. autumnale* is the familiar but mysteriously named sneezeweed, which adorns the late August and September border with colors anticipating the fall foliage. *Dugaldia (Helenium) hoopesii* is yellow and half the height of *H. autumnale.* It is a Rocky Mountain plant from a lowish zone. If you like plants that look "natural" or "wild," choose this one over the worked over heleniums. If you like opulent color and lush growth, try 'Moerheim Beauty,' 'Riverton Beauty,' 'Bruno,' 'Coppellia,' 'Butterpat' and on and on.

The pretty little annual, *Dyssodia (Thymophyllia) tenuiloba* is also in the *Helenium* tribe.

Finally and most important, *Hymenoxys* is a genus of this tribe. *Hymenoxys grandiflora* is the "Old Man of the Mountains," a two-inch yellow disk on a three-inch stem with leaves so fine and grey as to be almost invisible. This magnificent plant can be seen on Independence Pass and every Colorado alpine tundra; the flowers face east. In the garden, alas, the best one can do is to raise plants from seed and live in hope from one year to the next. The plants may take several years to bloom and the end result is usually a sad travesty of the mountain memory. But plants like these are the challenge of the rock gardener and one must keep on trying. *Hymenoxys acaulis* from Mount Evans is another gem. This has forms from lower elevations which are easy to please; they multiply and divide as easily as an aster. Other names for this plant are *Actinea herbacea* and *Rydbergia.*

Part III

Aromatic Daisies: The Anthemis Tribe

The plants comprising the fourth tribe of the family Compositae are mostly aromatic with leaves cut into intricate patterns. Their smells are varied and often evocative, sometimes disgusting. Chrysanthemums bring back memories of Harvest Festivals, an English equivalent of Thanksgiving. At least it was the custom in Congregational churches to decorate the church with apples, vegetables and flowers. I have no idea what the Methodists, Anglicans and Catholics did in October. We usually went to chapel reluctantly but without argument, but Harvest Festival was worth seeing and certainly worth smelling. And above the fruity smell of apples and the foody smell of cabbages arose the powerful aroma of massed chrysanthemums. For some people the association is funereal, and not everyone likes the crushed leaves of anthemis, chrysanthemum and achillea. Often a chamomile lawn is planted to avoid boring grass and one of its points is the haunting scent as idiosyncratic as a thyme lawn.

Another member of the tribe is *Artemisia* which gives some Western deserts their characteristic look and hot scent. For me, artemisia means "lad's love," the name we gave to *A. abrotanum.* I do know what the Methodists, Anglicans and Catholics were doing on Whit Monday—they were marching behind their own Sunday School banners in the Whitsuntide procession along with the Congs on a five mile walk to sing hymns in a muddy field. Everyone was wearing new shoes and a few a sprig of lad's love or a carnation.

The genus *Achillea* has a number of frequently grown species. *Achillea ageratifolia* is often called *Anthemis aizoon* and is a spectacular foliage plant with good flowers. It is so good natured and well known that you may take it for granted. It looks well in a border or a decent-sized rock garden with enough room to spread. Keep it out of a trough; it will swamp its neighbors. The flowers are white and daisy-like with ray flowers as well as disk flowers. The individual heads are not very large making you want to call it an *Achillea,* but the sprays of flowers are loose and the individual heads have some value, making it more like an *Anthemis.* Size of head is not a diagnostic test of the two genera, though. The other main genera of interest to gardeners in the *Anthemis* tribe are *Artemisia* and *Chrysanthemum.* I shall group plants according to use in the garden.

First, some plants suitable for the border. Border chrysanthemums are probably to be treated like nursery-bought annuals. We fill up empty spaces in late August and hope, usually in vain, that there will be something left for another year. If you want to take them seriously, you must lift the stools and propagate them next spring. This disrespectful attitude would be heresy to

devotees of those glorious hybrids of aristocratic Oriental pedigree, grown and shown with meticulous flamboyance, especially in Japan. Two other standbys are *Chrysanthemum maximum,* the Shasta daisy, and *C. coccineum,* the pyrethrums. Both have named clones, sometimes hard to establish, that are propagated by division and both have ordinary forms that can be grown from seed. I have found that pyrethrums from seed are slow to get going but there is no other daisy with quite the same bold reds. *Chrysanthemum nipponicum* is a good white daisy with substantial leaves and woody stems, but it blooms rather late for the Berkshires. *Anthemis sancti johannis* is deep yellow and not very graceful. *Anthemis tinctoria* is called golden marguerite, with excellent flowers for cutting, especially in the forms 'Kelway' and 'E.C. Buxton.' *Achillea filipendulina* is a tall yarrow with big flat tops (Coronation Gold is a clone). *Achillea millefolium,* the common yarrow, comes in many dirty colors. *Achillea ptarmica* is a better white with a good looking double form ('The Pearl'). *Achillea* x 'Moonshine' has *A. tomentosa* parentage, but is a better plant.

Some medium large plants you could sneak into a rock garden or near the edges of a border include several achilleas. *Achillea ageratifolia, A. clavennae (argentea), A. chrysocoma* and *A. clypeolata* are all good plants. *Anthemis barrelieri* (five inches, white with grey leaves), *A. cupaniana* and *A. marschalliana (biebersteiniana)* are all a little lower, the last is a good yellow on deep grey. *Achillea abrotanoides* is a large ball of ferny leaves but not much flower. *Chrysanthemum rubellum* is a pink, foot–high, early chrysanthemum, probably a hybrid but more permanent than the fall monsters.

Shorter still is *Achillea erba-rotta rupestris* which is charming and white. *Achillea x lewisii* (the same as King Edward?) is a six inch high yarrow of a clotted cream color, with *A. tomentosa* as a parent, a nice plant but not showy in the least. *Anthemis cretica* is a good daisy about eight inches high which sprawls wickedly in one season or sulks in a small clump. If you have six feet of space to fill, it can do the job but there is no guarantee that it will. *Chrysanthemum weyrichii* is a soft, dusky pink and wanders gently hugging a boulder. *Chrysanthemum alpinum* is a more polite *A. cretica* and there are several other low white chrysanthemums such as *C. atratum* and *C. arcticum.* The real mat former is *Anacyclus depressus* which is hardy for us even though it comes from Morocco. The flowers are at their best just before they open as the reverse of the petals is a rich red. *Artemisia assoana* is also a mat until the flowers start to ascend, but unless you want seed, they can be clipped to keep the silvery carpet intact flowing down hot rocks. Spectacular.

Other plants grown for the leaves include *Chrysanthemum haradjanii, Artemisia stellerana* (dusty miller) and more like a small shrub is *A. schmidtiana.* This forms hemispherical mounds with no pruning and it can

A SIMPLE BULB FRAME

A. J. MacPhail, *North Vancouver, B. C.*

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Few would deny that, from the standpoint of appearance, the best way to grow bulbs is in the rock garden or other naturalistic garden setting. If one were to limit one's choice of bulbs to those that would thrive under such exposed conditions, there would be no problem. And not much fun, either.

There are a great many bulbous plants which have evolved in climates so vastly different from our own that they are simply unable to cope with an environment so alien. This group includes some of the most outstandingly beautiful plants in cultivation, so ineffably appealing as to engender at once the desire to possess them at whatever the inconvenience.

The most universally accepted method for dealing with these difficult bulbs is pot cultivation, the pots being over-wintered in a cold frame, alpine house, or cool greenhouse. But the cultivation of bulbs in pots is a very time-consuming proposition, especially if there are a lot of them. They must be watered, fed, and repotted regularly, and one seems to be forever moving the pots about—from potting shed to cold frame to alpine house; from alpine house to cold frame, from cold frame to drying out frame, etc. Moreover, a great many bulbs never do give of their best when grown in pots. They seem to ask for a more spacious root run and more soil over them. It is not unusual when repotting to find the bulbs have worked themselves right down to the bottom of the pot among the drainage crocks.

Obviously then, a more convenient method is required, and in fact such a method has existed in one form or another, probably dating back to the dawn of horticulture. In an article headed "The Culture of Mariposa Lilies" in the June, 1903 edition of *Flora and Silva* one Robert Wallace very succinctly described a bulb frame as follows:

". . . Another method of cultivation is to plant the bulbs in a frame and, where frames are to spare, nothing is simpler or better; the light is raised at each end, so that there is plenty of fresh air, and, at the same time, all rain is excluded. Remove all covering from the beds early in February, when the bulbs should be well advanced in growth. As they pass out of flower remove all flower stems, as, if left, they quickly seed, and, ripening on the plant, weaken the growth. Place a light over the bed towards the end of July and thoroughly rest and ripen the bulbs."

Considering the advantages of bulb frame cultivation it seems surprising it has not become popular since those words were written at about the turn of the century. To be sure, commercial growers have always recognized the virtues of bulb frames but, by and large, amateur growers have passed them by. No doubt the constant maintenance, let alone the expense, of all that glass counted against them. There is nothing quite so shattering—in both senses of the word—as the sound of breaking glass.

Bulb Frame

The design of the bulb frame to be described evolved out of our desire to use white corrugated PVC (polyvinyl chloride) plastic panels instead of the more conventional glass frame lights. Not only is this a much cheaper material than glass, it is light-weight, virtually indestructible, and the sections nest together for convenient storage. The fact that they are translucent rather than transparent has not been a disadvantage; they are, after all, only required for use during those periods when very little foliage appears above the ground anyway.

The frame itself is merely a big wooden box made of heavy planks nailed together. It can be made any length, in our case 14 ft., which happened to be the length of the available planks. The PVC panels are sold in a width of 26 inches and in varying lengths. We chose ten foot lengths and cut them in two (easy with scissors) to provide panels five feet long. The use of five foot panels requires that the overall width of the frame be about 54 inches in order to provide a suitable curvature when the panels are in place.

On each side of the frame along the upper edge are two strips shaped like an inverted letter "L" and held out from the side of the frame by one inch thick battens. The plastic panels are snapped into place between the inverted "L's" and are held in position by their own natural spring tension. Each panel overlaps the corrugation of the one next to it and can easily be snapped in and out.

The inside of the frame was given a waterproofing coat of asphalt emulsion and, below grade level, the same attention to drainage as one would employ in the building of a scree or rock garden. The soil mix used could probably be described as a very rich scree mix; something like equal parts loam, sand, pea gravel, and screened leafmould. To this was added about ten pounds of bone meal. Bulbs in cultivation are not, as a rule, overly fussy in their requirements as long as the soil is fairly rich and well drained. We also added a few handfuls of dolomite lime to neutralize our slightly acid soil.

A couple of rock outcroppings were set into the surface to relieve the frame's austere billiard table appearance and it was ready for planting.

The choice of plants is, of course, dictated by one's own preferences. There is a wealth of material to choose from, though it requires an uncommon degree of persistence to root out a source for the rarities. Western North America offers a superb hunting ground to the collector, to whom self-collected bulbs take on a preciousness far beyond their intrinsic value. Often the only way of acquiring a given species is growing from seed and, while this can be excessively slow, the effort required to grow the seedlings on to maturity in the frame is practically nil.

The blooming season in our frame begins in October, during which month the panels are entirely removed. Shortly after the first autumn rain, which the bulbs interpret as a signal to start doing their thing, the first of the autumn-winter crocuses explodes into bloom, the creamy-white *Crocus ochroleucus*. Since the panels are in place during the months of November, December, and January, these winter-blooming things are best grouped to-

gether at one end of the frame where the panels can be removed on sunny days. Other crocus species in bloom through the winter include tiny *Crocus niveus,* brightly-coloured *C. laevigatus fontenayi,* and later, the most beautiful *C. imperati.*

The earliest narcissus is the November-blooming *Narcissus bulbocodium monophyllus,* to my mind the best of the genus. It thrives in the frame, whereas in the open we have managed to keep it for but a season or two. It is followed in late December by *Narcissus bulbocodium romieuxii,* with its pale yellow flowers. Later comes the great spurt of narcissus species, from the smallest *Narcissus bulbocodium tenuifolius* to the most gaudy, *N. bulbocodium obesus,* and including *N. rupicola, N. watieri,* etc.

The first of the winter-blooming irises is the non-bulbous *I. unguicularis.* This is distinguished as being the only evergreen species in the frame and seems not to object to a total summer baking along with other inhabitants. It eventually grows too big for the frame and must be divided, but it is a joy as a young plant. The bulbous species begin with the most delicate of all, *I. bakeriana.* Then follow the various forms of *I. histrioides* and *I. reticulata.* The yellow *I. danfordiae,* which elsewhere splits up into little bulblets seems, in the frame, to have mended its ways. *I. winogradowii,* of fairly recent introduction, was planted last autumn and we look forward to the appearance of its flowers of sulphur yellow with orange markings on the falls.

Around the middle of February, if the weather is not too sloppy, the panels are permanently removed until the bulbs go dormant again in July. March and April, of course, are the most colorful months with the flamboyant species tulips, the later iris and narcissus, the scilla species, and the intense blue of *Tecophilaea cyanocrocus* all competing for attention.

But of all the inhabitants of the bulb frame, the two genera which provide the most fascination are Calochortus and Fritillaria. Through the generosity of Laura Jezik, of Seattle, we have been accorded the privilege of struggling with many of the American fritillarias which she wrote of in her helpful article, "American Fritillarias" in the July, 1969 ARGS *Bulletin.* They are plants of surpassing beauty and I wish I could say that all of them have responded splendidly and effortlessly. Not so! But many of them have done well enough to spur on our efforts. Perhaps our favourite in this group would be *Fritillaria purdyi,* which bloomed superbly, all silver-and-black mottled, and glistening like fine hammered sterling. *F. falcata* is also very choice, in fact it would be hard to imagine anything more delightful than this tiny species, only 2″ tall with a flower relatively enormous for the size of the plant. Our form is handsomely mottled in shades of subdued red and copper, with wonderfully attractive scarlet anthers. It, too, has that singular metallic quality of light reflection peculiar to some others of the genus. Other American species that have bloomed so far are *F. biflora, F. glauca, F. recurva, F. pudica,* and *F. striata.* Those which have not bloomed, and some of these likely have not yet attained blooming size, are *F. pluriflora, F.*

tristulus, F. viridea, F. liliacea, F. roderickii, F. phaeanthera, and *F. agrestis. F. pinetorum* set buds which failed to develop.

The European and Asiatic fritillarias are, in general, much easier to tame than their American counterparts and are a diverse and attractive lot. *F. assyriaca,* about 10″ tall, has slender, very elegant yellow flowers with dark purple markings. *F. persica* is variable, our form having a dusky, grape-purple, bell-shaped flower. *F. obliqua* has an almost black flower which would be unduly sombre-looking were it not for the contrasting bright yellow anthers. *F. crassifolia,* at 18″, is tall but has very distinctive bells of purple, lightly chequered and overlaid with jade green. Finally, we have a very confusing complex of species from Greece, Turkey, and Asia Minor regions. These are very appealing dwarf plants, usually under 6″, with flowers in shades of yellow, green and purple. They are available as *F. graeca, F. pinardii, F. sibthorpiana, F. caucasica,* and *F. armena,* but I have received the same plants under different names, and vice versa.

Surely no other genus of bulbous plants has so many desirable species (the latest revision lists 57) which at the same time are almost impossible to grow, as the genus *Calochortus.* Admittedly, some of them are of questionable hardiness, as the genus extends south through Mexico to Guatemala. Of the few we have tried in the open rock garden only *C. subalpinus,* collected on Mt. Hood, in Oregon, has lasted for any length of time. In the bulb frame, on the other hand, we have about 18 species, of which about a dozen have bloomed so far. Easiest and most free-flowering are the Fairy Lanterns of the Eucalochortus section: *C. amoenus, C. albus,* and *C. amabilis. C. uniflorus* threatens to become a weed! Less free-flowering are those of the Mariposa section, of which we have flowered *C. macrocarpus, C. luteus, C. clavatus, C. nudus, C. splendens,* and *C. venustus.* The last has appeared in three colour forms, one a strikingly vivid scarlet. Another outstanding species of this section is *C. howellii,* creamy white with a chartreuse center. Many of these we have had for only three years or so; hardly long enough to know whether they will be permanent.

Some of the rhizomatous irises are summer-dormant and thus ideal subjects for frame cultivation. Those of the Regelia and Oncocyclus sections, and the hybrids between the two, are exquisite plants, marked with delicate, subtle veining, and have the virtue (!) of being sufficiently difficult as to pose an interesting challenge. Outstanding in this group are: the Oncos *Iris susiana, I. gatesii, I. lortetii,* the hybrid *I.* x 'Chione'; and the Regelia section, *I. stolonifera,* which has falls and standards edged with a warm brown shade like the ears of a Chocolate-point Siamese kitten.

The Brodiaeas are for the most part modest plants but at least three species border on the spectacular. *B. ida-maia,* with flowers like red firecrackers, is a showpiece when seen with the sun behind it. *B. volubilis* has a flower stalk that twists and winds snake-like for several feet through the other plants in the frame, terminating in a burst of pink florets. And *B. minor,* an endearing purple-flowered dwarf, which, in July, is the last plant in the frame to bloom.

be used as comic relief in an otherwise humorless garden. The flowers spoil the shape.

There are other shrubby artemisias, mostly strongly aromatic. *Artemisia absinthium* is a rather coarse plant, but there is a form called 'Lambrook Silver' which is beautiful. *Artemisia camphorata* is also not very refined and smells of camphor when you brush it casually on a hot day. Similar in effect is *Santolina neapolitana,* but here the flowers are yellow blobs making a better show than the nondescript plumes of most artemisias. *Artemisia gnipi* is much smaller, but there isn't much reason to grow it unless it is the exact grey you want.

There are a few annuals to try such as *Chrysanthemum coronarium* and *C. carinatum. Anacyclus radiatus* is another I have grown but not highly recommended. Two tender plants well worth growing through the winter in the alpine house are *C. catananche* and *C. hosmariense.* These are borderline hardy and qualify as good show plants for the March show. You can plant them outside for the summer and make cuttings for the winter.

Senecios: Aristocratic Relatives of the Groundsels

The fifth tribe of the daisy family is the *Senecio* tribe. These are mostly yellow daisies, i.e., the species have both ray flowers and disk flowers. The heads may be mean little nonentities as in the plants we usually call groundsel and ragweed, or large enough to claim the flower as the main feature of the plant.

There are several arnicas in the seedlists. I have grown *Arnica montana, A. mollis, A. cordifolia* and *A. acaulis.* They are a reminder of mountain meadows—the sort of plant you expect to see on a hike after you get your second wind, but long before the snow line. Actually, *A. acaulis* comes from the non-mountainous Southeastern US and looks more like a *Helenium* than the others. Arnicas have broadish "petals" and not very many, so when one of them has been munched, there is a ragged look like a defiant urchin. If they like their location they will run about mildly and fill three to four feet comfortably.

Doronicum columnae (cordatum) is one of the earliest perennials to appear, flowering with *Tulipa turkistanica.* If planted in a perennial border, it would only be a brave promise of better things to follow, so it is usually used in combination with *Anemone blanda* and the main display of May bulbs. Besides, it keeps its leaves, more or less mitigating the blank look after the bulb leaves have faded out. *Doronicum orientale (caucasicum)* and *D. austriacum* are similar and there are a few hybrids. *Doronicum glaciale* is shorter and later and can be grown in the rock garden with medium-sized plants.

The main members of the tribe are *Senecio* and *Ligularia.* These are nearly all large plants for rich soil and damp areas. They can be grown in a border if you don't mind them looking a little unhappy in a drought. Or used as accent plants, even in the middle of a lawn. The trouble with doing this is that the plants have little presence until mid–June so you would have a circle of mulch to contemplate until the enormous leaves took over. These leaves are a joy and a problem as they suffocate every plant within two feet of the crown. These remarks apply to *Ligularia dentata* (some forms with spectacular reddish leaves), *L. stenocephala, L. przewalskii* (makes a lovely flower spike) and *L. hodgsonii.*

More easily placed in a border is *Senecio abrotanifolius,* especially the variety *tyrolensis,* which has a shower of yellow flowers in mid–June. Also, *S. adonidifolius,* with leaves like an adonis, which looks good out of flower.

An excellent rock garden plant is *S. leucophyllus,* a mat of grey, almost white, leaves. Still in seed pots are *S. candicans, S. capitatus, S. congestus, S. doronicum, S. fendleri, S. incanus, S. korschinskyi, S. longilobus* and *S. paulsonii.* Reports will have to await further experience.

There are two other plants you may want to use if you are fearless and need to decorate a large wet area. *Petasites japonicus* has flowers very early in spring, curious but not beautiful, and large leaves in summer, beautiful but overbearing. *Tussilago farfara* is an even worse weed.

Hardy Gesneriads — Ramonda

Quentin C. Schlieder
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There are several members of the Gesneriad (African Violet) family hardy in the Northeast at least as far north as southern Massachusetts. One of these, *Ramonda,* has grown for many years in a rock ledge in Polypody Rock at Allwood, the famous rock garden created by Zenon Schreiber for the late Leonard Buck in Far Hills, New Jersey. Although at times somewhat diminished by drought and harsh, cold winters, these plants of *R. myconi* in Mr. Buck's garden recover quickly.

The genus *Ramonda* commemorates Baron L.F.E. Ramond de Charbonnieres (1753–1827), a French botanist and traveler. The specific names are derived as follows: *myconi,* in honor of Francisco Myco, a 16th century Spanish physician; *serbica,* from Serbia; and, *nathaliae,* in honor of Nathalia (1859–1941), a former queen of Serbia. The genus *Ramonda* was recognized in 1805. It was previously described as a primrose and as a mullen.

Ramondas are truly special alpine plants held in high regard by both gesneriad and rock garden enthusiasts. The great English rock gardener and author, Reginald Farrer, wrote in *My Rock-Garden* in 1907, "Passing over the washy-colored Thrifts (none of whom I can love) and the brilliant Acantholimons from the sunny East, we come to Gesneriaceae and a group of rockplants before whom we ought to go down in gratitude on our knees." He described *R. nathaliae,* Queen Nathalia's ramonda, as the queen of all the ramondas.

A compost with good body which retains moisture yet drains well is recommended for growing ramondas. This compost should consist of equal parts of good garden loam, leaf-mold, sphagnum peat moss, and coarse sand. This mixture should be over a layer of good drainage material. The plants need considerable soil moisture when in active growth but must be kept barely moist when dormant in autumn and winter. The great nemesis of successful culture is crown rot which occurs when water is retained for any length of time around the crown of the plant. At Allwood, this problem was overcome by planting the ramondas in a crevice in a vertical ledge. The roots reach deep into the rock for moisture and sustenance while the crown of the plant receives perfect drainage. Like most gesneriads, the plants like bright light but not direct sunlight. A north-facing ledge seems to provide the perfect situation.

The plants are easily propagated from seed in March, planted in a pastuerized and gritty medium. One part compost and two parts coarse sand is a good basic medium. It is recommended that the surface of the seed pan be covered with a light covering of fine gravel (acid type such as granite)

to keep the crowns of the plants dry as the seedlings develop. The author has had poor results from seed obtained from the ARGS Seed Exchange but excellent germination from seed obtained from the American Gloxinia and Gesneriad Society Seed Exchange. Perhaps the freshness of the seed accounts for the different results.

Ramondas can also be propagated easily from leaf cuttings struck in the manner used for African Violet leaves. However, be warned that drainage is critical as is good air circulation around the leaf cuttings. Plants can be divided in April also.

The late Dr. Harold Moore provided the following key for identifying the three species in his book, *African Violets, Gloxinias and Their Relatives,* published in 1957:

A. Anthers tipped with a short point, yellow; causule 9/16″ to 3/4″ long . . . . . *Ramonda myconi*

AA. Anthers blunt at the tip, often blue or with a bluish cast; capsules 1/2″ long or mostly less.

B. Leaves spatula–shaped or obovate, irregularly and deeply toothed, upturned at the edges; corolla somewhat bell–shaped . . . . . *Ramonda serbica*

BB. Leaves nearly elliptic, broadly ovate or obovate–elliptic, rounded at the apex and more or less regularly toothed or scalloped, lying flat; corolla flat . . . . . *Ramonda nathaliae*

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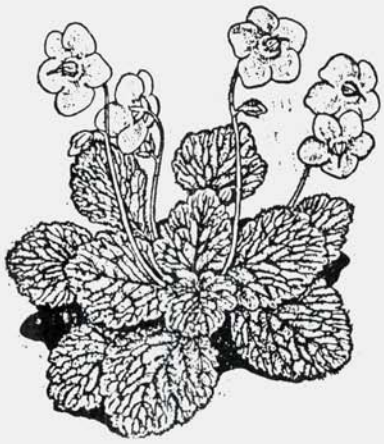

Reconsidering the Bergenias

Roy Davidson
Seattle, Washington

"Handsome and versatile, thriving in ordinary soil in any location"—this is what the cataloger writes about these big Himalayan saxifrages, and of course it is true. In nature they are distributed, as are so many temperate Asiatic plants, westward from the Korean peninsula and Amur Basin via the Himalayas and other allied ranges to Turkestan and Afghanistan in mountainous terrain. There are perhaps six species, with a couple of dozen names indicating some degree of variability. Although in the natural state they seem to have been rather stable populations, horticulturally they've become a muddled lot for the usual reasons and with the usual consequences.

Similar, even identical material may go by more than one name, as for instance *Bergenia beesiana, B. purpurascens,* and *B. delavayi* now acknowledged to be but variant forms of single species. In addition we have 'Ballawley' which was grown from intercrossing *B. delavayi* and *B. beesiana.* It was also once known as 'Delbees.'

Then too, unrecognized garden hybrids have usurped the names of perfectly good species, to the detriment of the species itself. Such an example is the gorgeous, light pink, precocious *B.* x *schmidtii* which has become firmly entrenched by the name *B. stracheyi,* an entirely different, smaller plant; it has also been sold as both *B. cordifolia* and *B. crassifolia.* It is easy to see how these confusions of identity led to a state of mistrust and disfavor with gardeners; however, that general attitude, so unjustly smug, that "if you've seen one bergenia, you've seen them all" just is not the case. Mention the name and the mind's eye conjures up a blur of coarse leathery leafage, stained liver and overwhelmed by masses of frozen rose–cerise turned brown in rockeries all over town. But among those unsung are some quite different, quite exquisite sorts, very good refined rock garden and alpine house candidates, first–rate plants that pay their way twelvemonth.

It is not only in America that this inequity exists. As most of our representatives came to us not from the wild but from European horticultural sources, so also came the inherent European misconceptions. At Kew recently, when the bergenias they grew went over to the herbarium to be authenticated, the surprising verdict revealed that there were actually few bona fide species there as labeled; somehow over the years a lot of unknown hybrids had crept in, among them, true, some quite nice to perfectly splendid individuals, but interlopers nonetheless. Others with such names as *B.*

cordifolia corrugata seem to be of whole cloth, unrecorded anywhere in the literature and surely of some gardener's imagination.

It is now almost two centuries since the name *Bergenia* was proposed (Moench, 1794) and the International Botanical Congress has given its approval to this name as conserved over other usage, so let's cease the apologetic, "They used to be saxifrages." They are bergenias. The first in European cultivation was *B. cordifolia,* introduced to Britain in 1779. The type on which the name was based by Linnaeus (1753) was a plant cultivated at Upsala.

Among the largest of the herbaceous plants of Saxifragaceae, bergenias are characterized by broad-spreading, thick rhizomes sheathed in thick leaf bases; if this blackish old material is pared away, the actual rhizome is found to be quite slender. Without this spongy, marcescent tissue, the plant's ability to regrow strong roots may be impaired—important to remember in propagating by division or if cleaning stock with intent to import it.

In the heyday of the past century of plant exploration, new species came from every quarter to Britain and other European centers of culture. Often these unknowns were regarded not so much for their own inherent qualities but as the raw product from which "refinements" could be grown. Indeed in cultivation such hybrids often spawned themselves, to go unrecognized into the horticultural world. The largest and brightest were those which struck the Victorian fancy and which fitted best into the opulence of the country seats and parks of Victorian fashion. Bergenias were conservatory plants at that time. One garden historian has noted that what Victorian taste lacked in refinement, it more than made up for in its unbridled exuberance. When fashion changed, everything Victorian suddenly became vulgar and old hat. Along with many another really good plant, the bergenia became intolerably tiresome, as indeed it had become. The really fine ones were lost.

And so it remained for a period. Gradually the little ones were re-introduced and identified. *Bergenia ligulata* as refound by Ludlow and Sherriff in steep, stony gorges in Nepal was described as having large crabapple blossoms densely clustered on stalks of rhubarb-red lighting the bloom. Farrer must have been quite enthralled to have written simply (for once) of the albino form as "noble close sprays of pearly white."

Similar is *B. ciliata,* but with softer leaves on long leafstalks and with the whole leaf, upper and lower surfaces plus the stalk, covered with long hairs. The plant looks for all the world like an outsize saintpaulia and is almost as tender to frost, unfortunately. When these flower in earliest spring without leaves, they bear an uncanny resemblance to our peltaphyllum even to the marcescent leaf bases blackening ropy rhizomes.

It is perhaps within *B. stracheyi* that the greatest promise of smaller, hardy plants for the rock garden lies, lovely as the others may be. This was one

species that became totally lost in the Victorian–Edwardian hiatus and is only recently re–introduced from Kashmir, the dry rather than monsoon side of the Himalayas.

If what is familiar as *B. stracheyi* is a large and lush, precocious beauty, then you know you have the pretender, but take heart, you are not alone. This plant is the subject of the Botanical Mazagine plate misidentified by none other than J. D. Hooker and now recognized as being the old German *B.* x *schmidtii* which by the rules for horticultural names must become *B.* x 'Ernst Schmidt.' This plant comes probably not from *B. stracheyi* but from *B. ciliata* and *B. purpurascens.* It is the most widely grown of all and quite rightly as it is the most attractive of the large sorts though not the hardiest to frost. In addition to having been marketed by many a masquerade label, it once bore the vulgar Latin banner *Saxifraga ligulata speciosa leichtlinii.* It is misidentified in the recent Sunset Magazine *Western Garden Book* as *B. ciliata* and as being synonymous with *B. ligulata.* The plant I grow came to me as *B. ciliata ligulata alba.* The name 'Dunes Gate' once referred to the same plant. These horticultural misnomers do a great disservice.

So much for the lovely imposter–queen. The true Kashmirian *B. stracheyi* has small non–cordate, fully hardy, leather–smooth leaves on short stalks forming rosettes of foliage less than a foot across and half as high, leaves dentate and somewhat ciliate, turning in cold weather to striking maroon or burgundy, copper or rust, splendid with clusters of rose–pink flowers in haste to better the first crocus. Various introductions have proven only slightly variable. I have been able to verify at least three of those I grow as being authentic along with others that will likely prove to be so. One of the latter is that grown prominently in the red borders at Hidcote Manor for its fine winter color. Another obtained as 'Autumn Red' stands mule–eared through the winter—a rufous mule. An albino–flowered form was once cataloged as *B. afghanica* and apparently also by the clone name 'Gambol.'

There are also a number of excellent smaller hybrid cultivars which are becoming not only popular but also available since the Wisley Trials resulted in Awards of Merit to several. Mr. Pugsley gave us the lovely 'Margery Fish' ('Ballawley' x *B. ciliata*) soft pink over rounded green leaves, and Blooms bought and introduced the rose–purple 'Bressingham Bountiful' (*B. ligulata* x *purpurascens*). 'Sunningdale,' one of a group of very old hybrids bred in Ireland before the turn of the century, was a nameless foundling which has been accorded a prize from Wisley and the respectability of introduction. It is a good rose color. From long inbred lines of old German hybrids from Arends, a Dutch grower has selected three introduced in 1950: 'Abendglut' (Evening Glow) semi–double red–purple, 'Morgenrote' (Morning Blush) a softer color set off in red–ciliate leaves, and 'Silberlicht' (Silver Light) with blushing–white flowers from brown calyces and stalks.

It is important to regard the leaves in planning placement in the garden, for in addition to their normal variety of seasonal colors, their various shapes and manner of growth according to the length of petiole give a variety of garden effects, some cuddly–cunning, others not at all so. They are striking with heath and heather used so much for the low maintenance, high interest gardening that we now seek. In autumn the deciduous ones do not merely die off, they do it in a blaze of bright butter yellow.

Taking note of some diverse opinions regarding bergenias as they have appeared in the writings of Britain's highly regarded garden authors may be rather amusing. Graham Thomas is fond of them and fond of saying so. It was he who gave 'Sunningdale' its re–introduction. Christopher Lloyd, on the other hand, cannot abide them, though they may have been used extensively at his Great Dixter Garden at one time for they were well thought of by Gertrude Jekyll who helped lay out the original plantings. She liked to use them abundantly as pot subjects and in the ground. Mr. Lloyd is quite outspoken on the matter, but he does sell some in his nursery, presumably to those who have not read what he writes.

In all fairness, Mr. Lloyd may be absolutely right; it is possible that the usual bergenias are indeed just too ponderous in his setting of massive architecture, great parterres, and vast perennial borders. And yet, in only slightly different circumstances, other sensitive plantsmen have quite taken to them. Vita Sackville–West was one of the most choosy and she used masses of them in the famous gardens at Sissinghurst; they are still there. Many old plants, their origins unknown, are still kept in many of the old gardens. Miss Jekyll used to plunge her pot–grown plants back as the groundcover between shrubberies to fatten up for repotting and thus they served her in two ways. At Kew today they are a bold and splendid mass groundcover in one of the most used and most littered areas of the grounds.

In quite another vein, an inspired use of bergenias in an unencumbered park setting at Warwick Castle on the Avon above Stratford might have been conceived by one of the French or Flemish "Paradise Painters." Imposed upon a slightly sloping lawn, a great fan–shaped bedded arrangement of 'Silberlicht' with hundreds of white lily–flowered tulips and thousands of white daisy flowers of silvered–lace–leaved *Anthemis punctata* ssp. *cupaniana* spread an incredibly romantic stage for white peacocks on the grass and clipped hedges in the spring sunshine.

(Adapted with permission from the program publication of the West Coast ARGS Winter Study Weekend Six, 1981)

The Unexpected

Judy Glattstein
Wilton, Connecticut

I get certain telephone calls that make me cringe. They involve some enthusiastic individual who has discovered an unusual or interesting or rare wildflower. Attempts to describe the plant verbally elicit the facts that it has leaves (generally green) and flowers (the color varies). Any more precise information is hampered by the fact that the person making the call usually has little grasp of botanical terms. Leaf shape, arrangement, flower form are described as roundish, several, different. I almost always plead a busy schedule and try to avoid going out in the field. In the vast majority of cases, Occam's Razor will apply. This law says things ought not to be multiplied except from necessity, or in other words if there are several solutions to a question, the simplest, most common will generally be the correct answer.

But every now and then there is this tingle down my spine. When a friend called recently and urged me to come see a strange, unusual plant, something told me to go. After all, in this chancy universe of ours, it must occasionally be truly strange.

When I arrived at her house, I began to have second thoughts. "You know," she said, "we've lived here 20 years, and this is only 10 feet off the back deck and I never saw them before." And as we came off the deck and walked around, she added, "They really looked better a few days ago." Wonderful. Now I get to identify a mysterious arrival in withered condition.

William of Occam, your law fell down this once, because what was growing was the biggest colony of the orchid *Isotria verticillata* that I have ever seen. Granted, I've only seen it once before.

The whorled pogonia is not as rare as its relative *I. medeoloides,* which is referred to by Carlyle Luer as "the rarest orchid east of the Mississippi River (exclusive of Florida)." He refers to *I. verticillata* as "neither common nor rare, but to discover a colony of it will always give a thrill to the finder." How true, how true. This is not a beautiful orchid; strange and unusual is a more fitting description. A single terminal flower has three long narrow yellow–green petals, one up, two down, around the lip which is also greenish yellow, edged with purple. The leaves look very similar to cucumber root, *Medeola virginica.* Out of bloom, the orchid can be distinguished because it has a hollow stem while *Medeola* has a solid one.

There are several factors that explain why my friend never noticed the plants before (although there were a couple of dehisced seed capsules from last year). Primarily, I would suggest the habit of growth. Both species of

Isotria commonly appear and bloom one year and then remain dormant for several years. Often there will be sterile plants growing for several years before conditions are correct for flowering. And out of bloom it is an undistinguished plant. The secondary factor is that last year my friend and her husband removed fifteen trees, thus allowing far more light into the area. While these are described as plants of shady woodlands, dry to moist, pinewoods and hardwoods, orchids generally need some limiting level of sunlight in order to grow well enough to flower. As woodlands mature and become shadier, understory plants change in composition when the ecological conditions are no longer suitable for the original genera.

Isotria medeoloides is listed as endangered on the Federal Register. The Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES) includes all of the Family Orchidaceae. Appendix I plants must have both an import and an export certificate, as well as a plant import permit. Class II and III (where Isotria fits) need an export permit only. While it would be legal, depending on state laws, to buy and sell Isotria within the United States, it hardly seems ethical or moral. The plant is very difficult of cultivation. Correll reports that *I. verticillata* is "rarely successful, owing to the difficulty of keeping the garden soil sufficiently acid, and of preventing fungi from overwhelming it." Of *I. medeoloides* he says, "There is no record of its successful cultivation . . . ."

My friend's site is the ideal location. The house is already built, so there is no threat from future development. Now that she has become aware of the colony, site management can ensure that the plants will not become overgrown or shaded out.

Some orchids are somewhat easier to cultivate. With elaborate soil pockets, suitable habitats can be built. Far better to simply buy a piece of property with orchids already growing and enjoy what comes naturally.

References

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2. Luer, Carlyle A., *The Native Orchids of the United States and Canada excluding Florida.* The New York Botanical Garden, New York, 1975
3. United States Department of Agriculture Animal and Plant Health Inspection Service, CITES List of Plant Species Protected by the Convention (as listed in 50 CFR 23.23) effective November 22, 1985.

Pinellia:
Harper's Poison, Hamilton's Meat

Laura Louise Foster
Falls Village, Connecticut

In the Fall 1983 *Bulletin,* Pam Harper of Seaford, Virginia, warned against *Pinellia ternata* as an invasive plant which increases rapidly by bulblets that form not only at the base of the stem but at the apex where the leaflets join.

On the other hand, Bill Hamilton of Ithaca, New York, considers *P. ternata* a wonderful aroid and claims he can never have enough of it in his garden. "A bizarre, yes, but unusual tuber for the woodland garden. They are wonderful plants. Everyone who comes to visit our garden is enthralled with these oriental exotics and asks for seed," he says. He sends seed of both *P. ternata* and *P. tripartita* to the seed exchange every year and is fearful that Pam's harsh words may discourage some from considering it.

In a note to the author as editor of the *Bulletin,* Pam queries, "Difference of *plant* or difference of opinion?" and urges further discussion on the subject. Even Pam admitted, however, that she was charmed by *P. ternata* when she first saw it, resembling as it did a miniature Jack–in–the–pulpit with a slender exerted spadix, "sticking out its tongue."

The Royal Horticultural Society Dictionary of Gardening lists three of apparently six species all coming from Japan and China.

Pinellia integrifolia is an elfin plant that sends up one to three ovate, unlobed, sharply pointed leaves about 2 inches long on slender stalks that rise 2 to 6 inches above small flattish tubers. The spathe of the flower is about 1¼ inches long and tube shaped, with the spadix extending only a quarter to a half inch beyond the end of the spathe.

Pinellia ternata, the subject of Pam's disapprobation, is a slightly larger plant, as much as 8 inches tall in flower. It is also known as *P. tuberifera* according to Ohwi and Brian Mathew. The leaves, 6 to 8 inches long and unlobed when young, develop three lobes as they become older. These three stemless, narrow, pointed lobes or leaflets are all about the same size and 2 inches long. In *P. ternata* forma angustata these lobes are linear. The green, occasionally purplish, spathe is about 3 inches long, the lower third being tubular before extending into a lanceolate blade that is somewhat hooded and rounded at the tip. The exterior of the spathe is smooth, the interior somewhat downy. The spadix is very slender and approximately 4 inches long so that it extends at least an inch beyond the opening in the spathe, frequently farther.

The problem with this species is the tuberlets or bulbils that are clustered

around the leaf–stem at ground level and at the juncture of the three leaflets. These break off the parent plant and rapidly colonize a wider and wider area.

Pinellia tripartita, by contrast, produces no bulbils and is therefore less aggressive. It has a single, fairly large, round tuber about an inch across covered with brown fibers. Also unlike *P. ternata,* its leaves, though deeply three–lobed, are not completely segmented into separate leaflets. Its leaves are more than twice the size of those of *P. ternata,* the mid–lobe being about 6 inches long, the two side lobes a little shorter. These lobes are comparatively broad for their length. The spathe is about 2½ to 4 inches long and held well above the foliage on an 8– to 20–inch scape. It is pale green, smooth, and waxy on the outside and washed with light purple and densely covered with minute wart–like projections on the inside. In *P. tripartita* forma *atropurpurea* the spathe is deep purple within. The blade of the spathe is oblong, concave, blunt at the tip and slightly curved inward. It is about the same length or a little longer than the narrow cylindrical tube. The spadix is filiform and extends as much as 4 to 6 inches or more beyond the spathe.

We have recently received from a Japanese friend small tubers of *P. cordata.* If it lives up to the photograph that was enclosed with the tubers, it should be a handsome plant which we hope will grow for us here in the northwest corner of Connecticut. As it is not mentioned in the *RHS Dictionary,* Ohwi, or Mather, we cannot judge its eventual size.

The leaves are apparently unlobed and of a slender heart shape (cordate) on long pinkish stalks. They are green on the upper side and patterned with silvery–white veining. They appear to be purple on the reverse. The flower scape is about the same length as the spathe and is a deep purple which bleeds up into the base of the pale green, rather swollen cylindrical tube. The blade of the spathe is also rather tubular and curves down rather abruptly like the top of a shepherd's crook about half way up its lenth. It appears to split open at the tip into two blunt lips. It is pale green on the outside and appears to be washed with pale purple within, but the entire spathe apparently turns white with age. The spadix appendage curves upward and is very slender and long, extending beyond the opening of the spathe at least two to three times the length of the spathe.

All pinellias prefer shade and rich woodland soil, but with good drainage. The fruit is a single berry containing a solitary seed.

Book Reviews

An Irish Flower Garden by E. Charles Nelson, Illustrations by Wendy Walsh, Boethius Press, Kilkenny, Ireland, 252 pages, $21.00 (cloth), $12.50 (paper)

An Irish Florilegium—Wild and Garden Plants of Ireland, watercolor paintings by Wendy Walsh, Introduction by Ruth Isabel Ross, notes on plates by E. Charles Nelson, Thames and Hudson, London, 48 handtipped colour plates, 224 pages, £60 (Currently out of print)

Dr. E. Charles Nelson is taxonomist at the National Botanic Gardens in Dublin, the foundation chairman of the Irish Garden Plant Society, and an author worthy of note.

His book *An Irish Flower Garden* makes agreeable reading for the plants-person although a number of species described in the work will grow in the United States only in its favored northwest corner. The book is dedicated to Evelyn Booth, Molly Sanderson, and David Shackleton. It consists of a series of about one hundred plant portraits all of which have historic bonds with Ireland. While some of the plants may be generally available, a number of them "linger only in the gardens of a few enthusiastic plantsmen or in derelict gardens."

Through the tales woven around each of the chosen species, the reader gains insight into Irish gardens and gardeners, nurseries and plant hunters, as well as an overview of Irish garden history. But it is the description and history of the plants that is most intriguing. It is hard not to covet them all. Take *Rosa hibernica* as an example: the Hollywood rose found and introduced by John Templeton in 1795 and nurtured by Lady Phylis Moore in her garden at Willbrook in Rathfarnham, "a greatly treasured modest little plant," of long flowering season, single blushing cream flowers, and pear-shaped cherry-red hips crowned by persistent sepals. It has grayish-green leaves and grows into a tall shrub. Thanks to Dr. Nelson, we learn that nurseries listing it supply plants which bear no relationship to Templeton's rose, but that the last wild plant of it, moved in the 1960s to the small experimental garden belonging to the Department of Botany in Queen's University, Belfast, is thriving and has recently been propagated. Latter day plant hunters take note.

And here is the history of *Prunus subhirtella autumnalis; Galanthus* 'Straffan,' the double-stalked late-flowering snowdrop; *Helleborus luteus grandiflorus,* now known as 'Bowles' Yellow,' a form selected by Sir Frederick Moore and sent to E.A. Bowles who 20 years later wrote to Lady Moore to the effect that the "butter yellow one is the one visitors prevent becoming a circular specimen. It has sown itself and one is almost as good as Mamma, real butter, not marge...."

All manner of herbaceous plants, vines, trees, and shrubs are included in Dr. Nelson's delightful book, many of them agreeably illustrated by Wendy Walsh, some tied directly to plant explorers such as Dr. Augustine Henry, Edward Madden, or Dr. Thomas Coulter, and all of them interesting. The essays are short and informative and very much a plantsperson's dish.

If *An Irish Flower Garden* is best suited to the bedside table, then *An Irish Florilegium* is destined for the coffee table.

This handsome and compendious tome has been produced with the support of the Bank of Ireland. As an introduction, Ruth Isabel Ross, a horticultural journalist in Dublin, has written a comprehensive and brief botanical and horticultural history of Ireland which covers the discovery of Irish plants, plants cultivated in Irish gardens, and the plants introduced by Irish plant hunters. The heart of the book consists of forty–eight delicate and beautiful watercolors of these plants accompanied by Charles Nelson's informative and readable texts.

The plants illustrated and described include species from the Burren, trees and shrubs from the great Irish gardens, erica and daboecia, favorites such as *Primula* x *pubescens* 'Old Irish Blue,' choice specimens such as *Meconopsis* x *sheldonii* 'Slieve Donard,' *Garrya* x *issaquahensis* 'Pat Ballard,' and *Escallonia rubra* 'C.F. Ball.'

This celebration of Irish plants and gardens deserves a place in the collector's library. The quality and accuracy of the botanical paintings more than justify its considerable cost. Though out of print, it is well worth a vigorous book shop search. Volume II is scheduled for release this fall.

Dr. E. Charles Nelson's literary production must leave him little time for taxonomic pursuits. His other publications include *John Lyons and His Orchid Manual* (1843), reproduced in 1983 and for which he wrote the introduction; *The Irish Gardeners' Three Year Diary* which he collected and edited on behalf of the Irish Garden Plant Society—an amusing, informative, and useful working diary for the horticulturist; a new facsimile of *Augustine Henry's Notes on Economic Botany of China* for which he wrote the introduction; and most recently, *The Brightest Jewel,* the definitive history of Glesnevin, Ireland's National Botanic Garden, in collaboration with Dr. Eileen McCracken. All of the above can be obtained from the Boethius Press, Clarabricken, Co. Kilkenny, Ireland.

— Frank Cabot

The Show Bench

1987 Annual Plant Show
Classes and Awards
Annual Meeting
Hartford, Connecticut — May 24, 1987

1) 3 pans rock garden plants, distinct genera in flower
Delaware Valley Chapter Award
(1) Gladys Zimmerman, *Lithodora diffusa* 'Grace Ward.' *Trollius pumilus, Anacyclus depressus;* (2) Esther LeGeyt Bailey, *Hypoxis hirsuta, Edraianthus serpyllifolius alba, Chrysogonum virginianum;* (3) Doroyth Clark, *Gentiana verna, Dodecatheon conjugens, Saxifraga rosacea*

2) 1 pan rock garden plant in flower
(1) Doroyth Clark, *Dodecatheon pulchellum* 'Red Wings'; (2) Howard Porter, *Asperula sintenisii;* (3) Mary Homans, *Houstonia caerulea*

3) 1 pan rock garden plant new, rare or difficult in cultivation
Robert Senior Award, Ohio Valley Chapter
(1) Norman Singer, *Asteriscus maritimus;* (2) Mary Homans, *Ulmus* x *elegantissima* 'Jacqueline Hillier'; (3) Don Jacobs, *Lysimachia congestiflora*

4) 1 pan Primula, species or hybrid
Doretta Klaber Award
(1) Esther LeGeyt Bailey, Primula sieboldii; (2) Doroyth Clark, *Primula* x *polyantha*; (3) Jim Jones, *Primula* 'Rubra'

5) 1 pan Primulaceae other than Primula
(1) Doroyth Clark, *Dodecatheon pulchellum;* (2) Kathie Lippitt, *Dodecatheon dentatum;* (3) Esther LeGeyt Bailey, *Cortusa matthioli* 'Alba'

6) 1 pan Phlox
(1) Howard Porter, *Phlox* 'Chattahoochie'; (2) Doroyth Clark, *Phlox* 'Roy's Special'

7) 1 pan Saxifraga
(1) none; (2) Mary Homans, *Saxifraga umbrosa* 'Elliott's Variety'; (3) Doroyth Clark, *Saxifraga pedemontana*

8) 1 pan bulbous or rhizomatous plant suitable for rock garden
Elizabeth Lawrence Award, Piedmont Chapter
(1) Jim Jones, *Allium karataviense;* (2) none; (3) Gladys Zimmerman, *Iris gracilipes*

9) 1 pan rock garden plant grown from seed by exhibitor

(1) Gladys Zimmerman, *Adiantum pedatum* ssp. *subpumilum;* (2) Paul Douglas Jones, *Chamaecyparis obtusa;* (3) Esther LeGeyt Bailey, *Lewisia cotyledon alba*

10) 1 pan dwarf shrub, not bonsai, suitable for rock garden
Connecticut Horticultural Society Award
(1) Mary Homans, *Salix* sp. (Lohbrunner); (2) Howard Porter, *Salix* x *boydii;* (3) Gladys Zimmerman, *Leptospermum humifusum*

11) 1 pan silver, gray or variegated foliage
(1) Joan Means, *Synthyris pinnatifida;* (2) Jim Jones, *Saxifraga* x *urbium 'Variegata';* (3) Doroyth Clark, *Degenia velibetica;* (HM) Norman Singer, *Paronychia argentea*

12) 1 pan Ericaceae suitable for rock garden
New England Chapter Award
(1) Mary Homans, *Rhododendron* 'Shamrock'; (2) Gladys Zimmerman, *Rhododendron kiusianum;* (3) Don Jacobs, *Leiophyllum buxifolium*

13) 1 pan dwarf conifer, not bonsai
(1) Gladys Zimmerman, *Tsuga* 'Coles'; (2) Paul Douglas Jones, *Chamaecyparis obtusa;* (3) Joan Means, *Chamaecyparis pisifera 'Tsukumo'*

14) 1 pan hardy fern suitable for rock garden
(1) Gladys Zimmerman, *Polystichum setiferum dahlem;* (2) none; (3) Mary Homans, *Cetarach officinarum*

15) 3 pans distinct genera, native to U.S.
H. Lincoln Foster Award
(1) Mary Homans, *Clintonia borealis, Arisaema triphyllum, Tiarella cordifolia;* (2) Doroyth Clark, *Cypripedium acaule, Dodecatheon conjugens, Polygala pauciflora;* (3) Gladys Zimmerman, *Dodecatheon meadia, Tiarella wherryi, Cypripedium calceolus* v. *pubescens*

16) 1 pan Lewisia, species or hybrid
(1) Doroyth Clark, *Lewisia columbiana* v. *rupicola;* (2) Esther LeGeyt Bailey, *Lewisia* 'Rose Splendor'; (3) none

17) 3 pans Crassulaceae
(1) Mary Homans, *Sedum middendorffianum, Sempervivum* sp.; (2) Esther LeGeyt Bailey, *Crassula milfordae, Sedum sempervivum, Sempervivum arachnoideum;* (3) Doroyth Clark, *Sempervivum* oddity, *Jovibarba sobolifera, Sedum (Rhodiola)* rosea ssp. *integrifolium*

18) 1 pan bun or cushion, flowers of no importance
Pennsylvania Horticultural Society Award
(1) Howard Porter, *Gypsophila aretioides;* (2) Joan Means, *Draba polytricha*; (3) Doroyth Clark, *Armeria* x *caesalpina*

19) 1 pan Ranunculaceae suitable for rock garden

(1) none; (2) Don Jacobs, *Thalictrum kiusianum*

20) Container of 3 or more distinct genera arranged for effect
Fran Lubera Memorial Award, Connecticut Chapter
(1) Norman Singer; (2) Gerry Fuller; (3) Mary Homans

Best in Show: Jean Means, *Synthyris pinnatifida*

Omnium-Gatherum

Corrections—Too many cooks spoiled the broth of accuracy in labeling or perhaps we were overwhelmed by the brilliance of the color in the last issue and thus need to make corrections in this issue. For those of you who may wish to rectify the errors in captioning several of the color plates in the last issue, correct labels are provided below which may be cut and pasted in place.

Page 133 top: Phlox 'Arroyo'

Page 133 bottom: Phlox 'Alborado'

Page 134 top: Phlox 'Mary Maslin'

Page 134 bottom: Phlox 'Tangelo'

Page 136 bottom: Townsendia parryi

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