

BULLETIN

of the

AMERICAN

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FALL COLOR IN THE ROCK GARDEN

ANNA R. ZOLLINGER, *Kingston, New York*

Our rock garden on what we call "The Slope" was planned to provide a view from the house all the year round. This made it necessary to plant for distance effects, for the Slope is far from the house and is also quite large. Thus, the aim was to incorporate some fairly bold landscape features. Basic, besides the rock structure, are low spreading plants. Some of them are splendid bloomers in their respective seasons, and later, when they are just expanses of green and silver in various shades, they are soothing to the eye and prevent spottiness. Some of the more striking ones are: ericas, callunas, phloxes, creeping brooms (*Cytisus decumbens*, *Genista sagittalis*), certain sedums, *Dryas octopetala*, *Ajuga reptans*, and even *Cerastium tomentosum*. Dwarf conifers, and mats of cotoneaster, bearberry, and mountain cranberry, (*Vaccinium vitis-idaea*) act as restful counterpoints in Spring's color symphony.

It isn't that we do not enjoy daily rounds to see the smaller tenants of the garden: gentians, lewisias, armerias, *Douglasia vitaliana*, penstemons, and many others; we just like to have a meaningful and all-year view from the house and terrace.

After all the showy flowers have fulfilled their cycle, and before winter brings into relief the architecture of rocks and evergreens, fall offers a quiet show to the distant onlooker. Reds and oranges appear in the gray-green weave. *Sedum kamschaticum*, long past its golden bloom, starts to mimic new flowers. If, in summer, its rampant spreading is a nuisance, the glowing orange-red of its leaves bursting out in unexpected places now makes the gardener wonder what on earth he had planted in those particular spots that was flowering so late. Various dwarf geraniums venture to put out an occasional bloom, but what, seen from the house, really looks like flowers are the red leaves liberally sprinkled over the plant which so far has stayed green. Friendly *Cotoneaster* 'Little Gem' spreads dark red carpets before finally shedding its tiny leaves. Even the modest *Pachistima canbyi* in its very dark purple contrasts nicely with the gray rocks.

Earlier in the season there were the brown platycodon clumps, the brilliant yellow of bloodroot leaves, and the deep purple of our native columbines. Quite late, a specimen of Siberian iris turns into a bright yellow flame rising behind a blue-green mound of *Daphne cneorum*.

White creates a good distance effect. It is provided in an unexpected way by *Alyssum argenteum*, and, I must confess, the surprise is entirely the fruit of my laziness. One fall, I was startled to see shining little clouds on the Slope. I investigated. I had failed to cut the alyssum's seed heads, and now the slanting sun was transforming the miniature "silver dollars" into sparkling halos! Needless to say, that nowadays in certain strategic spots, the alyssum is left untrimmed in order to brighten November days. Of course, the silvery effects of *Veronica incana*, lavender, *Alyssum saxatile*, and again the maligned *Cerastium tomentosum* are doubly welcome at this time. And let me not forget the white trunks of the birches no longer hidden by shrubbery beneath.

When, at last, the violent winds have robbed the trees of their glory, native witch hazel at the edge of the rock garden, in its veil of modest, but golden flowers, promises a new spring. But even the fallen leaves now have their function in the picture. They cover thickly the floor of the woods which border the Slope on three sides. Their warm blend of brown, russet, and yellow gives the rock garden a solid frame which sets it off from the surroundings as a "landscape" in its own right.

DRYAS

H. LINCOLN FOSTER, *Falls Village, Conn.*

When Linnaeus christened the Dryas, it was because of the resemblance of the evergreen leaves to small leaves of oak, and the oak was sacred to the dryads or wood-nymphs. The fancied resemblance to woodland dryads of the white blossoms of feathery seedheads dancing on slender pedicels at the windy heights among the mountains is but a happy coincidence. These are no children of the woods, but of the sun and open air; true mountain dwellers around the world in the Northern Hemisphere.

Not so happy is the coincidence that these gorgeous, creeping shrubs have been given the common name of Mountain Avens, suggesting a similarity to those other Avens, the Geums. To be sure, they both belong to the Rose family, and both carry feathery styles on the ripening achenes in the seed head, but there the likeness ceases.

The showiest of the three Dryas species is *D. octopetala*, which displays for a long season in late spring and early summer its glistening flowers of 8 to 10 petals. These begin to show their white color, peeking from the swollen, hairy sepals, when the slender pedicels are just beginning to arise from the evergreen mat of foliage. As the pedicels elongate, 3 to 6 inches, the overlapping petals expand into an open cup, filled with a stout tassel of golden stamens embracing a paint-brush of many pistils. In the sunlight, the reflection of gold from this central tassel gilds the inner depths of the chalice and glows through the petals.

When bees have found and ravished this goblet and have slathered themselves with the heavy silken pollen till their legs are bowed and wings lag, then the workmanlike styles swirl in spirals and slowly unwind their feathers into a tousled head. As the seeds ripen, the feathery styles begin to brown. Then, when they pull away easily, you may collect them for immediate sowing.

After sowing, the seeds may germinate within two weeks, or you may have to wait until the following spring for signs of life. At last, maybe even two patient years from capture and sowing, there will appear an unmistakable Dryas. (All species apparently behave the same, if they behave at all). But this is only the first of your devotions to the dryads.

These plants are not quickly or easily established upon the earth—though

once so founded they flourish forever. Seedlings are slow and curiously sensitive to transplanting. Unlike many plants that send reaching roots into all corners of the seeding mixture, these seem to wish to settle-in by sending only one wandering root down into the earth source. If you can wait until this wild gravitational urge is stilled into the formation of side-feeding rootlets, then you may transplant to a deep pot of open, gravelly soil, or direct to the sunny scree, or open, well-drained rock garden. No heavy clay, no dark corners, no close shade against the sustaining sun. Even then the seedlings may sadly shrivel and succumb.

It is easier to allow an established plant to supply the material for propagation. Cuttings with a flush of new growth and a base of last year's wood will, in August, rapidly root in a shaded, moisture constant, sandy rooting medium. Or, if the urge is upon you in May when the leaves, echoing the unfolding oaks in the woods, are beginning to expand beneath the elongating blossom-stems, find a naturally layered woody branch, sever it with clippers, and dig it carefully. Here is an established side-arm of an established plant. But severed away from the grandfather root, it rarely flourishes on its own immediately. Better to cosset it in a partially shaded bed of sand until new roots have formed and complete independence is declared. Then you are free to move it where you will. But let the spot where you place it (not tenderly now, but firmly) be in the eye of the sun, in well drained soil—not necessarily either limy or acid, as long as it has room to ramp and root. These prescriptions hold true, as far as I know, for *Dryas octopetala* and its varieties and for *D. drummondii*, the shyly nodding yellow species and for the rare but scarcely distinct *D. tomentosa* of the Canadian Rockies.

Dryas octopetala, the most widespread of the species, has varied as it moved about the world since prehistoric times. (Its leaf patterns are marked in ancient deposits). There is the somewhat standard form; a ground-hugging woody plant,



Dryas octopetala as it grows wild in Iceland

rooting as it spreads, found frequently in limy soils in alpine regions of the world. The leaves are about one inch long, gray-tomentose beneath, shining green above, rounded dentate along the edges, like those of the White Oak in miniature, generally sub-cordate at the base. In severe winters without snow cover in the softer world of the lowland garden, many of the leaves may be blasted by sun. But most will green again, and on bare stems new ones will spring forth to replace them even before the blossoms unfold. Even beneath snow the old leaves become tarnished, but the dull brown of the winter foliage miraculously greens in the spring.

There are varieties of this species to be found in the American Rockies and on some isolated cliffs of Great Britain in which the leaves, flowers, and the whole habit of growth have been diminished by half. This is variety *minor*: choice and elegant for the small rock garden, but not so easy to establish or propagate. Other forms or varieties are locally recognized; var. *lanata* with grayish hairs on the upper surface of the leaf as well as beneath; var. *integrifolia* or *tenella*—these are perhaps not really synonymous. Var. *integrifolia* is smaller in all parts, but differs from var. *minor* by appearing to have no indentations on the leaf margins. This is because of an underfolding of the small leaf to prevent excessive transpiration in sites of diminished moisture. Var. *tenella* is neither revolute, nor unindented on the margins of the leaves, nor does it have the uniformly diminutive character of var. *minor*. At least in cultivation where conditions may be more luxuriant than in its native home, it carries fully expanded, oak-shaped leaves; narrower and bronzed more noticeably in winter than the normal species.

But, as always, I make these assertions about the varieties on the basis of the plant, or plants I have known under these names. In the case of var. *tenella*, it is a single plant grown from seed pinched from George Schenk's garden in Seattle where the plant was labeled *D. tenella*. Whatever it is, it is not the same as *D. octopetala integrifolia* I used to grow that came from the White Mountains of New Hampshire; nor is it the same miniature *D. octopetala* I saw and coveted on top of Mt. Lolo in the Bitter Root Mountains of Montana. A small rooted layer of this last form could not be quickly nursed in sand, and succumbed. The few seeds collected were probably not quite ripe, or not fertile. At any rate they never germinated.

Seed of all the *Dryas* variants is tricky to handle. Once again this is a snap judgment without careful and controlled testing. Like many achene-form seeds with tail-like styles persisting, they do seem quickly to lose their viability. Sowed as soon as thoroughly ripe, some seeds do, indeed, germinate. Three years to flowering is precocious. Nor does the rampaging parent plant, which once established will go sprawling in almost any site, seem to spread its progeny by self-sowing. In fifteen years of growing *D. octopetala* in many sites in the garden at Millstream, I have found only one volunteer seedling, unflowered after three full growing seasons since I recognized it as a vagrant on its own.

Dryas drummondii, the yellow-flowered species, elegant in growth habit, but pinched and shy of bloom, has all the same recalcitrance of propagation. It is, moreover, even as a growing plant, less easy to move, or divide, or strike from cuttings, nor does it ramp and roam so readily.

I remember my first sight of this plant in the wild. This was on the gravel bars in the Grande Riviere of the Gaspé to which we had been transported in the shallop of a French Canadian farm boy who found us slithering along the steep muddy banks of the river. Amidst the stones and pebbles and sands of the extensive mid-stream bars, which must be several feet under water in the spring, were sizable mats of *Dryas*, past flowering. The leaves were slightly smaller than those of *D. octopetala* and cuneate at the base. Quite silver-gray beneath, the upper

surface was a smoky pinkish tan and conspicuously covered with an open mat of long, silky hairs, completely adpressed. We were finally able to locate two small seedling plants, easy to dig amidst the gravel. Transported dry in sealed plastic bags, these survived four days on the road, plus an inspection in the office of the Plant Inspector in Quebec, and have become established in the gravelly soil of a raised bed in our garden. It was three years before they showed a yellow blossom, a lovely soft color but disappointing because the petals do not open wide at the end of the nodding pedicels.

Suendermann used *D. octopetala* as the seed parent for a hybrid with *D. drummondii* producing what is known as the *D. suendermannii*. This is reputed to have a habit like the seed parent with flowers slightly nodding and yellowish in bud. Plants I have purchased under this name have been indistinguishable from vigorous forms of *D. octopetala*. Perhaps a cross in the opposite direction would make a more interesting hybrid.

The chief species in themselves are rock garden plants whose beauty increases with age, year by year, once established, and the small-leaved forms of *D. octopetala* are real gems.

FLORA OF THE KRKONOSE NATIONAL PARK

ING. FRANTISEK PROCHAZKA, *Pardubice, Czechoslovakia*

In this article I would like to introduce to you the third highest Middle European mountain range—the Krkonose Mountains, which in 1963 were proclaimed a National Park.

The Krkonose Mountains are the highest part of the so-called Sudety Mountains and they form a range 30 km long just on the border of Czechoslovakia and Poland. Mt. Snezka, 1602 meters high, is not only the highest peak of the Krkonose but also of Bohemia.

Even though the Krkonose Mountains are not as high as the other Middle European ranges, the alpine flora is quite well developed there. In the past the lowest slopes of Krkonose were overgrown with forests of *Fagus sylvatica* and *Abies alba*, but they were mostly devastated by man and replaced later by monocultures of *Picea abies*. Only a part of the primeval forest was saved in the eastern limestone part of these mountains. This is now known as the Rychory Forest and is strictly preserved today. The higher slopes of Krkonose were overgrown in the past with *Picea abies* which still forms the vast woods up to 1300 m. Above this altitude there is an incoherent subalpine zone with *Pinus mugo* and such rare mountain shrubs as *Padus racemosa* ssp. *petraea*, *Betula carpatica*, *Sorbus aucuparia* ssp. *glabrata*, *Ribes petraeum* and *Juniperus nana*. Higher up follows the alpine zone with alpine meadows and rocky terrain. There, may be found some outstanding alpine species, many of which are relicts from the Glacial Period.

The importance of the Krkonose Mountains, from the point of view of the floral evolution of Middle Europe, is great because the localities of some of the rare relict species help us reconstruct the ways of the extension of the alpine flora in the far past from the centers of their origin. We can say, because of this, that the Krkonose Mountains are much more important than the substantially higher High Tatras, a part of the Karpathian Range in eastern Czechoslovakia, even though they are richer in alpine flora. Geologically the Krkonose are very old, more than 500 million years. They are the remainders of the then Varisky Range. At that far past time the Alps and Karpathians had only started to rise from the

bottom of the primeval sea. The other well-known high mountain ranges such as the Himalayas, Hindu Kush and Cordilleras did not exist at that time.

During the long Glacial Period the Krkonose were covered with fifteen glaciers which left us several interesting geological relicts, such as two lakes; in one of them grows the rare *Isoetes lacustris*. Also there is a system of moraines, etc. The most important to us are the numerous glacier-cirques often with waterfalls. It is in these cirques that most of the outstanding flora is concentrated. The cirques, post-glacial bogs, and alpine meadows have remained intact, unspoiled by man, and this is the reason we can find there the original plant associations with rare species included.

Among the most outstanding plants of Krkonose are the numerous glacial relicts having their original habitat near the polar circle. They are *Woodсия alpina*, *Bartsia alpina*, *Poa laxa*, *Saxifraga nivalis*, *S. oppositifolia* ssp. *arctoalpina*, *S. aspera* ssp. *bryoides*, *S. moschata* ssp. *basaltica*, *Epilobium anagallidifolium*, *Myosotis alpestris*, *Gnaphalium supinum*, *Salix lapponum* ssp. *lapponum*, *Carex magellanica*, *C. brunnescens* ssp. *brunnescens*, *C. fyllae*, *Linnaea borealis*, *Salix herbacea*, and *Androsace obtusifolia*.

Two very typical glacial relicts are *Pedicularis sudetica*, the nearest habitat of which lies very far from here, beyond the polar circle in arctic Siberia and North America; and *Rubus chamaemorus*, only 5-12 cm tall, that is still well represented in north Europe, but rarely so in Germany.

The Krkonose Mountains are also known for their endemic plants which have their origin and home only there. They are: *Sorbus sudetica*, *Campanula corcontica* (a relative of the alpine *Campanula scheuchzeri*), and at least seventeen species of the genus *Hieracium*, (*H. bohemicum*, *H. corconticum*, *H. purkynei*, etc.). Other interesting alpine plants appearing in these mountains which prove the botanical richness of the range: *Hedysarum obscurum*, *Swertia perennis*, *Veronica alpina*, *V. bellidioides*, *Viola lutea*, ssp. *sudetica*, *V. biflora*, *Primula minima* var. *corcontica*, *Hieracium aurantiacum*, *H. melanocephalum*, *H. alpinum*, *Pulsatilla alba*, *P. vernalis*, *Sieversia montana*, *Anemone narcissiflora*, *Achyrophorus uniflorus*, *Arabis alpina*, *Allium victorialis*, *A. sibiricum*, *Crocus albiflorus*, *C. heuffelianus*, *Cryptogramma crispa*, *Dianthus superbus* ssp. *speciosus*, *Diphysium alpinum*, *Rhodiola rosea*, *Sedum alpestre*, *Huperzia selago*, *Polystichum aculeatum*, *P. lonchitis*, *Gentiana pannonica*, and *G. asclepiadea*.

These taller, yet beautiful plants are worth mentioning: *Campanula latifolia*, *Circium heterophyllum*, *Aconitum callibotryon*, *A. variegatum*, *Ranunculus platanifolius*, *Adenostyles alliariae*, *Delphinium elatum*, *Lilium martagon*, and *L. bulbiferum*.

Of course, there are still other interesting species that are more or less of only botanical interest, and I will mention only these few that are rather rare in middle European mountains: *Meum athamanticum*, *Pleurospermum austriacum*, *Selaginella ciliata*, *Cardamine resedifolia*, *C. opizii*, *Minuartia gerardii*, *Juncus trifidus*, *Trifolium badium*, *Festuca versicolor*, *F. supina*, *Stachys alpina*, and *Taraxacum nigricans*. In the peat bogs were such species as *Vaccinium uliginosum*, *V. oxycoccus*, *V. microcarpon*, *Carex limosa*, *C. pauciflora*, *Andromeda polifolia*, *Scheuchzeria palustris*, *Trichophorum caespitosum* ssp. *austriacum*, *T. alpinum*, and *Empetrum hermaphroditum*.

The display of the Krkonose flora would not be complete without mentioning several beautiful terrestrial orchids such as *Platanthera bifolia*, *Listera ovata*, *L. cordata*, *Coeloglossum viride*, *Gymnadenia conopsea* ssp. *montana*, *Leucorchis albida*, *Epipogium aphyllum*, *Neottia nidus avis*, *Orchis mascula*, *O. ustulata*, *Epipactis latifolia*, *Dactylorhiza latifolia*, *D. fuchsii*, *Corallorhiza trifida*, *Traunsteinera globosa*, *Dactylorhiza sambucina*, etc.

The Krkonose Mountains are also ideal for tourism and recreation. There

are many recreation centers (Harrachov, Pec p. Snezkou, Spindleruv Mlyn, Janske Lazne, etc.), numerous cable-cars, and there are several roads to the mountain tops. All this, together with the unique natural beauty, attracts more and more visitors.

I would be most happy if my article is helpful, not only to those who might one day come to see all this with their own eyes, but also for those others who will find in it only informative reading about a small, far, but beautiful and important mountain range in the heart of Europe.

SCABIOSAS FOR THE ROCK GARDEN

ROBERT M. SENIOR, *Cincinnati, Ohio*

Probably many of our readers have raised Scabiosas, where they are highly attractive in the border, but often too tall for the rock garden. Many of these taller plants have been hybridized, and the Englishman, House, has developed some astonishingly beautiful plants.

At different times we have raised several plants that are of low stature. They have never presented any cultural difficulties, growing in light soil and in full sun. The succession of bloom is long, often starting in May and continuing throughout the summer. Thus they are often in bloom when the rock garden as a whole has lost much of its spring radiance.

If the reader were to select only one or two scabiosas for his garden, he would make no mistake in choosing from among those mentioned below. All of them usually bear flowers of a pinkish or violet shade. Possibly the lowest growing is *S. lucida*, which is about six inches high.

Many years ago, seeds of the low-growing scabiosas were seldom listed in the catalogues of American nurserymen. The first ones that we raised were purchased from Messrs. Thompson & Morgan, Ipswich, England. In recent years, however, a number of species have been listed in the seed catalogues of the Alpine Garden Society, as well as in the lists of our own Society. This year I observed that seeds of *S. graminifolia* and *S. lucida* were included.

Nearly all scabiosas have finely divided leaves, some of them almost fern-like. One exception is *S. graminifolia* which is about ten inches high, and bears narrow, entire leaves and violet to rose-colored flowers. This plant is pictured in the *English Dictionary of Gardening*.

S. silenifolia is about seven inches high, with rosy-violet flowers, and bloomed in our garden most of the summer. In our little alpine house it continued blooming until well into the fall. Incidentally, Farrer, in one of his books, highly recommends this plant.

S. lucida is approximately as tall as *S. silenifolia*, with more or less shiny leaves and good-sized flowers of a rosy-lilac shade. The stem leaves near the base are pinnatifid, with rather deeply cut segments. This plant also has a long period of bloom.

It may be of interest, at this point, to mention a delightful plant that is closely related to scabiosa, and which to the casual observer may look just like this genus. This is *Pteroccephalus parnassi*, that differs mainly from scabiosa in that the seeds have rather feathery plumes attached to them, whereas in scabiosa the seeds have tiny bristles attached. This year, in our little alpine house, *P. parnassi* bloomed about the middle of April. It had fully ten stems arising from the base, each one terminating in a violet-colored flower that was about one and

*Scabiosa silenifolia*

R. M. Senior

one half inches in diameter. Since we have only one plant, we did not risk planting it in the garden, but in due course we hope to divide the plant, or raise more of them from seed. Then we expect to try them outdoors where they should be readily hardy. Incidentally, I observe that in our last seed list, this plant was included under the synonym of *Scabiosa parnassifolia*.

* * * * *

OUR *BULLETIN* IS REVIEWED IN YUGOSLAVIA—Our only Yugoslavian member, Prof. ing. Peter Matkovic, who is the editor of the magazine *Hortikultura*, sent the *Bulletin* editor copies of the first two 1967 issues of his magazine. In the first is a review of the January, 1967 issue of the ARG *Bulletin*. The review is lengthy and in it there is a brief discussion of many of the individual articles, with an especially long paragraph devoted to the article by Mr. Vaclav Plestil. References to *Tulipa korshinskyi* indicated much interest in that species. This review was written by Dr. ing. Sime Zupanovic. In the next issue appeared another review, even longer, of the same *Bulletin*, this time by ing. Marcelo Jelaska. Again, many of the articles were commented on and in addition a reproduction of the front cover of the *Bulletin* was featured. Not often is a publication reviewed at length in two successive issues of the same magazine. In appreciation, a review of our Yugoslavian member's *Hortikultura* will appear in a subsequent *Bulletin*.

TRULY A ROCK GARDEN

A. M. S.

A ROCK GARDEN, reduced to its simplest terms, is a garden wherein rocks are present. The word "garden" implies the presence of plant material. So, any natural or cultivated area of nominal size wherein rocks and plants are intermingled is, broadly speaking, a rock garden. In cultivated rock gardens the emphasis is on the plants and the artistry with which rocks are used to enhance the beauty and grace of the plant material. The discreet use of water, either running or standing, adds to the garden's enchantment.

The rock gardener knows the botanical name of every plant in his garden and the family to which each belongs. He has reference books that tell him who named each plant and in which part of the world each is found most abundantly in nature. He can read the exact specifications of each of his plants, in botanical terms, of course, and he can ascertain the basic requirements of each.

Lovingly he expends time, energy and hard cash to meet the requirements of his plants, yes, even to satisfy their whims. His attention to details of soil, moisture, exposure, temperature preference and susceptibility to disease and insect attack is almost slavish in its intensity. In his sleeping hours the rock gardener dreams of the rock garden that, to him, approaches the ideal, and in his wakeful time he strives to bring that ideal into reality. He is driven by his desire to bring to fruition a rock garden that will attest to the high degree of his skill as a rock garden architect, to his knowledge of plants and his ability to cope with their every idiosyncrasy; all to the end that a work of art may be created.

All of this preoccupation with plants is laudable, of course, and necessary, but what of the rocks? Was the gardener's interest in geology and his knowledge of it equal to his interest in and knowledge of botany? Undoubtedly it was not. True, rocks were important in the building of the rock garden and for a short time it was truly a planting of rocks—rocks which the gardener procured from the adjacent countryside or brought in from a great distance at great expense. He was probably fanatical about the placement of the rocks but once they were settled to his satisfaction his entire attention was concentrated on the plants and their planting.

This is a natural human tendency. The rocks in the garden become permanent fixtures and require no further attention and present no longer a challenge. The plants introduced into the rock strewn area are alive, they do need attention and they do present a challenge. What true rock gardener has ever flinched from such a challenge? Once the plants are established in his garden, the gardener, forever afterwards, as long as he lives or as long as he retains possession, must give his full attention to the everchanging living material. Constant thought, ceaseless work and eternal vigilance is necessary or the garden languishes or runs riot and the gardener's idealistic dream, brought so near to perfection in reality, is shattered.

How often have we seen rock gardens in which the plants have been allowed to overwhelm the rocks to such an extent that to call them rock gardens is a gross misnomer. I blush to add that my own rock garden is rapidly deteriorating into this condition. Drastic measures must be taken—but where is the time?

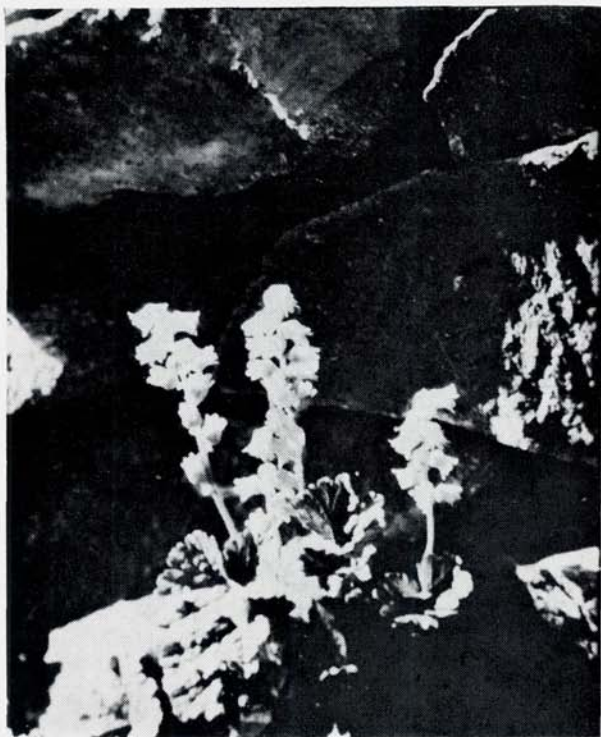
This discussion, so far, has stressed the predominance of planted material over rocks in the rock garden. Now I wish to tell you of a rock garden, the handiwork of nature, where rocks dominate the scene and plants are few and scattered.

Bleakness and austerity are there and a stark beauty, too. There is relief from overornamentation and one's reaction upon first seeing this rocky place is one of thankfulness that simplicity has been served, that there is room in which to roam among the rocks and time to think about and appreciate the individual beauty of the few plants that are present. One cannot do this in the flower-surfeited meadows of our mountains. I believe that I would rather worship at the shrine of a single gentian than attend a mass meeting of thousands upon thousands of showy flowers that riot in multicolored splendor on some mountainside.

One day in the middle of August I hiked the five miles into Summerland on the east side of Mt. Rainier. I was accompanied by my wife and my daughter. We went beyond Summerland on the trail to Panhandle Gap. Sometimes the trail was just a trace through and over broken rock of all sizes, shapes, and degrees of grayness and sometimes it was covered by snow banks. On the snow we crossed over a rushing stream that was fed by the melting snow of Fryingpan Glacier. The wind was blowing strongly and was very cold, so we abandoned the trail and veered to the left, thinking that a rocky cliff we could see in that direction would break the wind for us. We found ourselves on a rocky bench at the foot of the cliff and we were glad to be out of the tormenting wind. As we faced down the gentle slope of the bench we had the cliff on our right and on the left the bench dropped away into a chasm several hundred feet deep. The streams we had crossed sidled across one corner of the bench and plunged into the chasm in a beautiful fall of shattering water. The bench was irregularly shaped, not at all level from side to side, about a quarter of a mile long and from twenty to fifty feet wide. The elevation was a bit over 6,000 feet. There was no soil in evidence, only rocks and there were a few pools scattered about.

In this bleak spot, seldom if ever visited, we found a natural rock garden where the emphasis was on rocks, overwhelmingly on rocks. At first glance, or from a distance, one saw only the rocks. But there were plants there, many of them abloom. Some were rock-hugging and all of them, with one exception, were dwarf. Walking along the face of the scarred and creviced cliff, we were happy to see a lovely little fern tucked in a tight crevice. It was easily recognized as *Polypodium hesperium*. At high elevations, where the moisture supply is not constant, this fern is very dwarf and as it decreases in size it increases in jauntiness. In looking further up the crevice, splashes of color focused our attention on *Penstemon rupicola*, one plant above another, cherry red pendants hanging on the gray cliff. The cliff sloped away from us at this point and was an ideal place for this penstemon, which being rather brittle, self-prunes its branchlets, and these lovely gray detached segments find a lodging place further down the cliff and start new plants. This habit can be taken advantage of in the garden.

High on the cliff and growing in a barely discernible crack waved a dwarf *Heuchera glabra*. Its airy panicles of tiny white flowers stood out perkily from the cliff and furnished us with a study in fragile gracefulness. We searched the cliff for other surprises and in a recessed miniature rock garden, right at eye level, grew two plants which, at first glance, did not seem to belong together. The larger plant, but still only half its normal size, was *Cryptogramma acrostichoides*, the parsley fern, dainty and petite, with its fertile fronds not yet fully developed. Close by it were several crisp mounds of sharp-leaved *Saxifraga bronchialis* subsp. *austromontana*, whose white flowers on one inch stems had wine colored spots near the base of the petals. Beneath this exquisite example of nature's use of high altitude, low temperature and short growing season to create smaller and more refined editions of plants that are naturally larger, even coarser sometimes, in their usual environments, we found a single holly fern, *Polystichum lonchitis*, which seemed to say, "This is my home. This is my piece of earth. Here I am alone and



Elmera (Heuchera) racemosa

I glory in my solitude and my strength." Brave plant!

Rock gardeners are enchanted with these dwarf plants and long to have them in their gardens, but too often they fail to give thought to the spirit of these independent little alpinists. Some gardeners are so thoughtless as to remove these specialized plants from their adopted environment and plop them down in their own garden where the soil is comparatively rich. If one of these plants can adapt quickly enough to the radically changed conditions to remain alive, it may, in time, respond to the unaccustomed nourishment in the soil and losing its identity as an alpine, grow lush and, of course, the gardener feels cheated. Others, who use all their knowledge and skill in placing collected alpinists in an environment as nearly as possible like their home station are not too successful, either.

As we strolled along the foot of the cliff we had been so interested in the plants growing on its face that we had neglected to look out on the floor of the bench. When one of us did glance away from the cliff, the gasp of surprise caused the others to lose interest in the cliff. There was the rock strewn bench alive with plants, not as a mountain meadow is alive with flowers in such quantities as to make a veritable crazy quilt of color, but as a barren plain whose few plants are sparsely placed and where each plant stands alone in its own place and neither adds to nor detracts from the charm of any other.

The first plant that riveted our attention was an evergreen so lovely that it brought tears to our eyes, or perhaps it was the wind again for we had moved away from the shelter of the cliff. Most northwesterners know and love the

mountain hemlock, *Tsuga mertensiana*, at its best just below timberline. It is a tree that substitutes grace and foliage design of great beauty for the prim symmetry of *Abies lasiocarpa*, the subalpine fir. Both are ornaments to any mountain landscape. But here we were above timberline and the mountain hemlock we gathered about was only 16 inches high and every inch of it a mature tree and perfect in every respect. In shape and fullness of foliage and in sturdy health it was a joy to behold. The branches could not be seen for the thick, star-arranged foliage. There was no evidence of contortion, so it would seem that the wind, though frigid at times, must never have been too severe.

Other conifers were present though scattered and each had the same dwarf sturdy compactness as the hemlock. *Pinus albicaulis* was there, some as tall as 12 inches, very branchy and well needled but lacking the white bark, which at timberline in taller trees, earns them their specific name. No *Picea engelmannii* was seen but that is perhaps because we did not look long enough. *Abies lasiocarpa* was represented by tiny replicas of the larger petticoated trees that dispose themselves in elite groups about the mountain slopes close to timberline. Just before we started to leave, and almost overlooked, was a very small, and I am sure, a very aged Alaska cypress, *Chamaecyparis nootkatensis*. It was marred by one fractured limb that hung down to the ground like the broken wing of an otherwise healthy bird. Some extra weight of snow, or the shifting of the rocks when the melting snow sent torrents over the bench, must have caused the little tree's mishap. No conifer, of the little group that we saw, was over 16 inches high. How wonderful they would look in our rock gardens, but to take them would be an act of vandalism even though one could find such trees outside the boundaries of a national park.

We have introduced larger timberline trees into our garden and planted them along the top of the rock garden where they screen us from the neighbor's houses higher up the hill and serve as our own hillside horizon. They were six feet tall when we brought them in some twelve years ago. Their roots must have by this time penetrated the surfacing of good soil and forced their way into the tough clay beneath. This may account for the fact that in the last five years their growth seems to have been retarded and although they have retained their healthy appearance and their typical alpine shape, they are only about nine feet high now.

When we finally tore ourselves away from the little hemlock and before we found the other conifers, we began to find smaller plants. I do not now remember in which order we found them for confusion reigned with each of the three of us discovering new plants at the same time and demanding that the others come to see them. Perhaps I should take up the various genera in turn. A start will be made with penstemons. Already *Penstemon rupicola* has been mentioned. There were mats of dentate-leaved *P. menziesii* with large trumpets of clear purple and other mats of the same species with flowers much lighter in color. Near the edge of the chasm we found another penstemon which at first we did not recognize as a different species, but since its tiny obovate leaves were entire, it must have been *P. davidsonii*, by some authorities treated as a subspecies of *P. menziesii*.

We could not find *Saxifraga oppositifolia* in this rocky place although we had previously found it on the steep sides of the Cowlitz Chimneys not more than two miles away. We did find *S. caespitosa* crowded in between the rocks and how these tiny ones can survive the churning of the loose rocks at certain times of the year is something to make one wonder. This saxifrage has white flowers on inch stems and the flowers are without spots. These plants can scarcely hide their identity for the little cushions are made up of many small pellets which in turn are nothing more than densely imbricated leaves. Another saxifrage, more abundant in this place than any other was *S. tolmiei* with fat, sedum-like foliage

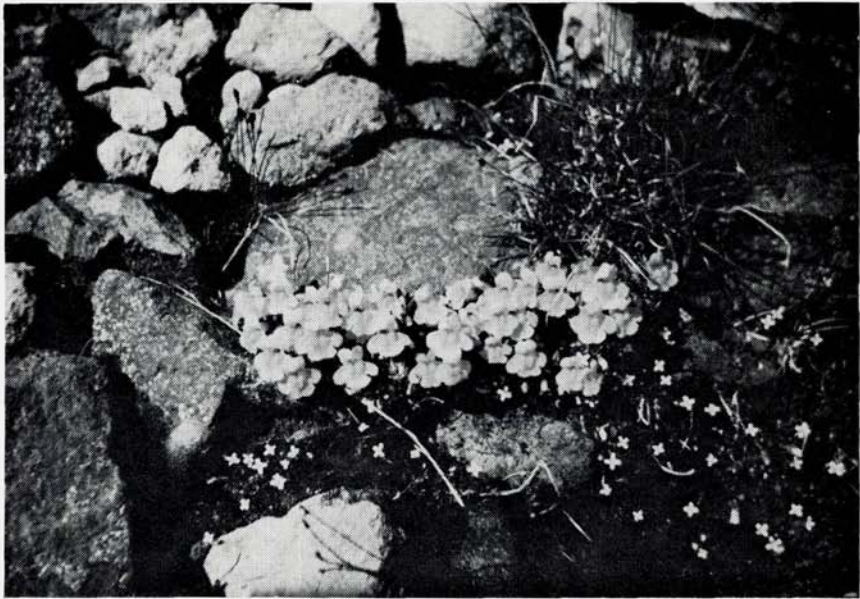
spreading over the smaller rocks, usually at the sheltering base of large rocks. Above this green mat ride white flowers more nearly resembling snow flakes than do those of other saxifrages.

By the time we had been on the bench for half an hour, the sky became overcast and there were spits of rain but we had light plastic ponchos with us, which we put on. It rained only enough to speckle the larger rocks and dapple the surface of a small pool beside which grew an eight-inch *Spiraea densiflora* with several flat-topped panicles of rosy flowers. Its location at the pool's edge and the dark brown-tipped rushes that stood about, like hussars waiting for marching orders, each in his brown busby, made a lovely picture that could have been enhanced by sunshine. Another spiraea-like plant was *Luetkea pectinata* which makes green carpets over the rocks in the lee of larger ones and sends up two-inch plumes of white flowers. This plant can be easily grown in our northwestern gardens.

The one exception that must have proven the rule that plants growing at the higher levels within their possibility range will be of small stature and of a pleasing compactness in comparison with plants of the same species growing in the environment where they are most abundant was *Mimulus lewisii*. Some thousand feet below us beside the banks of the Summerland streamlets, this monkey flower grows lush and leafy, hindered not at all by the brawling waters, and surmounts its green lushness with large bilabiate flowers of handsome rose. At the higher level, where we now were, where other plants responded to the more rigorous climate and the stony soil by tightening their imaginative belts and fought back at nature's high level austerity, until they were fit and trim, *Mimulus lewisii* undaunted by these climatic restrictions, conducted itself in a most illogical manner. Where was the rich soil of the stream bank and the constant abundance of water, the partial shade of huge rocks which also sheltered them from the stronger winds? They were not present on this stony bench. But the lushness was there and the full stature—*Mimulus lewisii* in all its lower elevation glory. Perhaps it was imagination, but I thought that I could detect a certain refinement of leaf texture, a firmness of purpose in the way the leaves held themselves and a softer glow to the rose flowers. Yet they were the giants of the landscape, larger than the conifers and the willows. And how those rosy splashes of color lighted up the gray of the ever present rocks!

There were other monkey flowers about, too, although they seemed to feel the altitude more nearly as the other flowers did. *Mimulus caespitosus* crowded its yellow blossoms so closely together that they hid their leaves and did their best to make up for the lack of sunshine. Another sunshine substitute was the moss that grew in many places among the rocks, testifying to a constant supply of water under the rocky carpet. This is the same chartreuse moss that covers great areas of the slopes running down to Summerland and it is through this moss that the many snow and ice nurtured streams splash their rollicksome way. *Mimulus caespitosus* grows in this moss and seems always to be attended by the tiny four-cornered stars of *Epilobium alpinum*.

Some of the plants in this natural rock garden were represented by but single specimens. Sometimes we would be in the shelter of the cliff and sometimes by the chasm's edge — often we were buffeted by the chill wind. The temperature had dropped and it was cold enough to vaporize our breath—nevertheless we continued our exploration in an exhilarated mood. Draped over one dull-toned rock was a happy *Silene acaulis* with delicate pink blossoms, en masse, covering at least half of the cascading plant while the other half of it was lightly sprinkled with individual flowers. This was the only silene that we found. Another lone plant was *Haplopappus brandegei*, (*Erigeron aureus*), cheerful and amazingly golden were the six flower heads, each on its own two inch stalk. Other composites were



Mimulus caespitosus and *Epilobium alpinum*

Albert M. Sutton

Aster alpigenus with extra large flower heads on shortened stems; very short stemmed *Anaphalis margaritacea* (to us these are Pearly Everlastings); *Achillea millefolium* var. *alpicola* which is an alpine form of the common yarrow and very attractive in this petite form. The genera *Arnica* and *Senecio* were represented but by the time we found them our hands were so cold that reference to Jones' *Flowering Plants and Ferns of Mt. Rainier*, which we always carry with us on that mountain, was dispensed with, which is proof that we are not true botanists—mosquitoes and fatigue also blunt our pursuit of botanical knowledge.

We found a dandelion-like plant that was new to us. It proved to be *Agoseris vestita*. This mountain dandelion has large rather untidy flower heads of pale yellow. Its basal leaves were quite long, oblanceolate, nearly entire and had a whitish cast. It was interesting and cheerful in a pale way.

Veronics were about the only blue flowers we found and the amount of blue was almost negligible, for the plants were diminutive, barely lifting their topmost blossoms above the smaller rocks. *Veronica cusickii* has leaves a bit longer than *V. wormskjoldii* (*V. alpina*) and although both were present, it took close observation to distinguish one from another.

Several willows seemed quite happy to be among this floral company and kept their size down in harmony with the other plants. *Salix commutata* and *S. barclayi* were both there. They are supposed to be similar but here the growth habits were quite different. *S. commutata*, with leaves green on both sides, was a particularly disorderly plant, draping its floundering limbs over the larger rocks with helter-skelter abandon. By larger rocks I mean the larger ones in that vicinity, for the willows were no more than 18 inches high. *S. barclayi* was more genteel but had not the charm of its romping companion. We did not see the two creeping willows which could well have been growing there. These two are *S. nivalis* and *S. cascadenis*.

There was one flat topped rock that had a small indentation in its top where a cupful of water made a small pool and over one side of the rock *Juniperus*

sibirica saucily preened itself, while peeking over the far edge was a hesitant *Phyllodoce glanduliflora* with its urns of feeble yellow almost invisible against the gray rock. If this had been my garden I would have been tempted to substitute for it *P. empetriiformis*, whose rosy sprays would have looked very handsome there. We found other ericaceous plants nearby: *Cassiope mertensiana* was pleasing in the number and white brilliance of its flowers and *Empetrum nigrum*, one plant only, had not yet set its black berries.

We almost missed a small grouping of Indian paint brushes. How anyone could miss this brilliant scarlet display was hard to understand. *Castilleja rupicola* is never bashful but here it was hardly more than a dazzling red-head that twinkled unabashed from the midst of a level assembly of walnut-sized rocks. The paint brushes' stems were almost non-existent. We were about to take a reluctant departure from this enchanting place as it was getting late and the storm clouds seemed much lower. We took one last look around. On a slight slope, where a trickle of water persisted, were several much larger rocks about the base of which was grouped a large colony of *Heuchera racemosa* (*Elmera racemosa*). These are favorite flowers with us although we have never had any success with them in the garden. They seem, in their native habitat, to have a formal dignity that few other flowers possess. Near them was a ten inch mountain ash, *Sorbus occidentalis*, which gave the impression of being fully grown. As we left one of us almost stepped on a little camouflaged plant so nestled in the loose rocks as to be easily missed. This was *Spraguea umbellata*, known to us from the beginning of our botanical studies as *S. multiceps*. Its pinkish pussy-paws radiate from the plant's center and they hug the ground.

As we made our reluctant way down the trail toward Summerland under lowering skies, occasionally pelted by rain, we discussed the garden of rocks and flowers we had found. The plants there were the most surprising, each plant a miniature of its own species, in all but the size of the blossoms, dwarfed in stature by an environment not compatible with its normal habitat. They had, so many species of them, adapted to a harsher condition of life and seemed to be proud of their accomplishment, for each plant that grew there carried an air of competence and perfect contentment.

A long sleep beneath their blanket of snow, a pleasant awakening with the weight of snow gone and a kindly sun to strike warmth into their roots and an abundance of cold water stimulated these plants to furious activity and there was no time to be spent in bemoaning their rigorous life. Perfect drainage and a spartan soil aided them in the acceptance of this new life. A shorter growing season made them hustle. Freezing temperature on all but a few of their wakeful nights kept them hardy. Clean and vigorous sunlight encouraged them into overtime production. There was foliage to shake out in the mountain winds, blossoms to unfurl for the glorification of their rock-strewn home (and the pleasure of chance beholders), bees and other insects to entice that fertilization might be consummated, seeds to be formed and ripened and finally cast to the winds before the coming of another snow and another long sleep.

I am now wondering about the possibility of our having been led to that garden on the rocky flank of a great mountain that we might learn a lesson in the art of our favorite type of gardening, a lesson in the beauty and value of simplicity. There, an abundance of rocks and a few plants—uncluttered spaces that rest the eye and delight our artistic susceptibilities—and here, in our lowland gardens, a few rocks and an abundance of plants.

I am not sure just how to apply this lesson to my own rock garden. I must think about it. However, this I know, the word "rock" in the name "rock garden" now has a greater significance.

BOOK REVIEW

THE ENGLISH HEATHER GARDEN, by D. Fyfe Maxwell and P. S. Patrick. Macdonald, London. 1966. 184 pp. 40s (\$5.60).

This delightful little book is an excellently indexed source of every sort of information for any gardener interested in growing heathers. Particularly valuable to one not certain of identifying the various heather species are the ten line drawings of species and some hybrids. But the book is less encyclopedia of handy information than almost lyrical autobiography by a lover of heathers and all the other charming wild plants to be found on the English heaths and moors.

The authors studied together at the Royal Horticultural Society Gardens at Wisley, Surrey. They were later associated in the nursery business at Wimborne, Dorset, in the famous Maxwell & Beale nursery which was responsible for the introduction of so many choice heather varieties. Mr. Maxwell commenced the writing of this book, but did not survive to complete it. It was finished for publication by Mr. Patrick who, however, has felicitously retained the first person form with which the book was started.

It is an account of a lifetime spent walking the moors, mostly of the south-western part of England, observing the natural bounty and rejoicing in the occasional find of a potentially choice variety; rejoicing, too, in the many friends with like interests. Particularly loving are the descriptions of Dorset, where the authors lived and where a sharp eye could sometimes spot a very choice new form of heather by just looking across the garden fence. Close to Dorset's Channel coast lies the Great Heath, which "besides being a station of the South European *Erica ciliaris*, carries a rich flora, though at first sight it appears to grow little beyond heathers, gorse and grasses. The marsh gentian, *Gentiana pneumonanthe*, opens its true blue flowers as the purple of the heather fades. There is *Genista anglica*, the Needle Furze, with little, yellow, pea-shaped flowers, and the dwarf, single white 'Burnet' roses, the flowers of which are followed by ebony-coloured hips. The creeping willow, *Salix repens*, with its tiny silver palm in early spring, creeps low among the heather, but when planted in the garden, in richness and shelter, it may spring up to six feet. The butterwort (*Pinguicula*) thrusts its little mauve trumpets up from pale green, sticky, fly-catching rosettes. There are two kinds of Sundew (*Drosera*) in the boggy places ————.

"The royal fern, *Osmunda regalis*, in the few damp woods of the Great Heath, will rise to a height of six feet; the rare moonwort fern, three inches high, that does not look like a fern, and some terrestrial orchids can also be found there. This is one of the two or three districts in England where the smooth snake and the green lizard live, and a grasshopper, occupying only a few acres (Editor's Note—?), is found nowhere else in this country."

Anyone who reads this book is likely to become a heather lover whether he meant to or not.

DOROTHY METHENY

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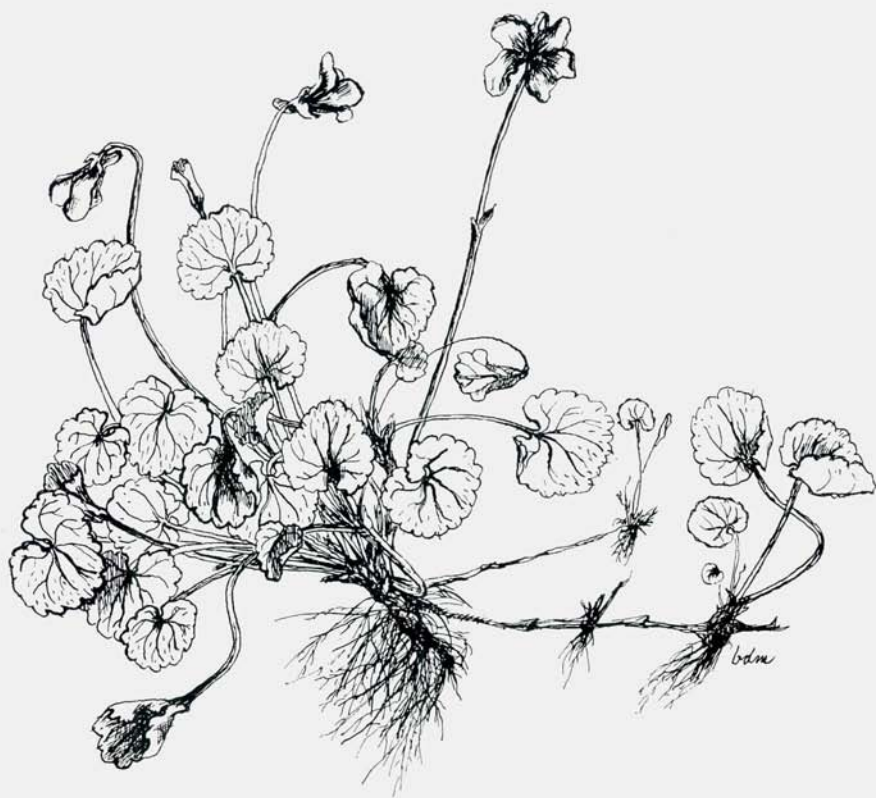
DRABA DEDEANA ZAPATERI—Dr. C. R. Worth, in referring to his just-arrived Bulletin (April) tells of this plant. He writes, "Betty Hayward writes well-deserved praise for *Draba dedeana*. Seed is often available through the seed exchanges of the Scottish Rock Garden Club and the Alpine Garden Society. But so is seed of *Draba dedeana zapateri*, which as I have it, is much inferior to the type—looser, smaller-flowered, and rather surprisingly, more difficult." It might be noted that seed of *Draba dedeana* was also offered in the seed list of the ARGS.

OUR TINIEST EASTERN MOUNTAIN VIOLET

EDGAR T. WHERRY, *Philadelphia, Pa.*

This fascinating little plant has had a hectic nomenclatural career. It was apparently first noticed by Dr. and Mrs. H. A. Davis, amateur botanists of Morgantown, West Virginia. Unable to believe that it could be a new species, they tentatively identified it as *Viola labradorica*. It actually differs from that in significant respects, so it was then guessed to be *Viola walteri*, a southern species which, incidentally, it does not resemble at all.

This violet proved also to grow in Pennsylvania, and in 1953 it was named by Dr. L. K. Henry, of the Carnegie Museum, *Viola allegheniensis*. Alas! This species epithet proved to have been used many years before for a different plant, so a few months later, Dr. Henry renamed it *Viola appalachiensis*. Dr. Norman H. Russell, of Rutgers University, the leading present-day student of the genus, is still reluctant to accept its species distinctness, but has not demonstrated close relationship to any other; so for the present, Dr. Henry's ultimate name may be

*Viola appalachiensis* — Near normal size

Barbara Deighan Minott

accepted.

The writer collected this plant in the wooded plateau country of Somerset County, Pennsylvania, and distributed it to several shady-place rock gardeners from whom it has received favorable comment.

It thrives in subacid woodland humus, spreading by stolons into dense mats, and producing in spring a profusion of dainty, violet-blue flowers, as well brought out in the accompanying drawing.

LETTERS

(Editor's Note)—Excerpts from two letters are published below. We have heard from both writers before. One tells some details of rock garden construction under conditions which would cause many of us to shun even the thought of gardening, and the other tells of the joy of rock gardening and reveals instances of both success and failure. Each writer plans further contributions to tell us about the plants they grow under adverse conditions. Perhaps the faint-hearted among our members, if there are any, may gain courage and inspiration from reading these excerpts. The first is from a letter written by the Rev. Father R. Vandersteene who lives at Trout Lake, well north of Edmonton, Alberta. The second is from Inge Bartho, a lady who lives in New Hampshire. Both have one thing in common to combat; killing frosts in late spring, or even in early summer. How easy some of us have it weatherwise!

"My cabin," writes Father Vandersteene, "is built on a low ridge (a special feature of this area) nearly in the form of a circle enclosing dryish muskeg. The ridge is from six to sixty feet wide and from ten to twenty-five feet high. This is completely enclosed by the mission fence. A little trail runs all along the top of the ridge and two small bridges get the trail across the narrow draws where the central muskeg drains.

"The southern part of the ring is where my cabin is in a small clearing. To the left of the cabin and behind it is a stand of mixed spruce (white, balsam, and black), aspen and some black poplar; with underbrush of willow, saskatoon, mooseberry, and various other small shrubs. To the right of the cabin is a stand of very young aspen and willows as thick underbrush with a good sprinkling of wild roses. Further to the right the spruce take over and then aspen again and pine. The front of the ridge to the south is grassland in the center, wet woods to the left and a wet muskeg to the right. A wagon trail runs from the grassland between the ridge and the muskeg.

"The lot is about 160 feet long and between twenty and sixty feet wide. Landscaping is important here as most of the year the soil is covered with snow, and spring and fall, are bleak ochre periods. Summer is very bright and cheery (except for the mosquitoes) though far too short. But with some landscaping the snow can make nice patterns, and the color and arrangement of the rocks and stones can create much interest, so that even without green leaves or flowers, the rock garden remains beautiful all year round.

"I started by digging, in the edge of the grassland toward the foot of the ridge, an elongated half pear-shaped bowl; the lowest part about four feet below the original ground level. (All turf was kept). I then cut down from the top of the ridge and made a straight gash (about eight feet wide) opening into the half pear. This way, since I dressed the sides with rock, I had three walls, one in full sun, and two in half-day shade. At the base of the gash to the west, I made a step wall, and to the east a big, simulated split-boulder wall. I kept the top line of the ridge intact, took most of the brush off, and worked the rest to fit the lines

of the gash and the bowl, making as many small and large strips, pockets and small slopes as possible.

"Then I connected the bottom part of the bowl with the step wall by an earth bridge and a series of ridges and heaps. All of these details are composed of rocks and dirt. This way the muskeg overflow in spring and the heavy summer rains drain through the rock garden toward the moist woods, and at the same time I have two wet spots for moisture-loving plants. Also I had a chance to build two necessary bridges, one small one in front of my cabin, and a big one for the horse and wagon trail.

"By all this cutting, digging, and filling I was able to provide for a wide range of moisture and dryness, from black muck to dry sand, from peat and leaf mold to clay and lime. Of course, I did not prevent the winter cold or the spring and summer frosts, but that will be the next story; my trials with plants, failures mostly, and how, after all, the rock garden is still very beautiful, thanks to the wide variety of plants I tried. Thanks, too, to the very splendid help friends and dealers (or dealer friends) have given me."

Mrs. Inge Bartho, of Center Conway, N. H., writes, as of April first, that because many rock garden plants are so small it is possible that they might be overlooked by the gardener in the spring unless, as she says, "If he wants to see them really, he has to practically put his nose to the ground. I do this, and what a world of exquisite plants are looking back at me. Unbelievably pretty are all these tiny flowers, so perfect, colorful, and interesting. There is so much more to each one than one would think when looking at them from above.

"Frankly, I can hardly wait to get my hands again into the soil. The hands look it later on, but the heart is happier with the feel of the soil on each fingertip. There is something wholly satisfying in this, a peaceful feeling all over when gardening. I personally don't like to wear gloves. I would rather have rough hands and the sort of fingernails that go with them in summer, than to miss the contact with the earth. Winter is long enough, with its yearnings for another summer, to heal and clean the hands.

". . . This *Lewisia tweedyi* is really a very odd one. I raised it from Thurman's seed. I set them out in the fall, but kept the container in the house during the winter. Nothing showed by spring, so I emptied the whole thing into the ground in the vegetable garden very carefully, disturbing them but little. In the late summer three seedlings showed (this was 1963). One I planted as recommended, the second I put behind a rock on the wall with morning sun, and the third I just left where it was as it looked good to me right there. (Not from a gardener's point of view, but from the way the plant itself looked—just happy there). And sure enough, I lost the other two that were planted to specifications. In 1964, on the plant left in the vegetable garden, I got the first blooms, and if I remember correctly, the number was in the upper teens. In 1965 there were over forty flowers in all, and the next year even more. The most flowers at one time, not counting buds, were fifteen. This lewisia grows on flat ground, in a gritty soil, on the uppermost part of my slightly sloping vegetable garden, in full sun, shaded to the south by a board (not pretty, but necessary) and gets water once a day, more sometimes, less other times, depending on how much the vegetables want and need. Everything I have done with it has been against the rules, I know. I do not cut off the new rosettes for fear I will make a mistake and destroy the plant. I get more and more crowns over the years. The leaves are not as floppy as are the ones I see in other gardens, nor as big, nor as wholly green. The leaves of my plant are slightly red-rimmed, shorter, quite thick and the fleshiness is hard. They hold themselves stiffly, slightly above the ground.

"... The weather is very tricky here in spring. The days will be very warm and the plants put forth a good deal of growth. Then come the freezing nights, and many things go. I had *Eritrichium nanum*, the real kind, (seeds from Floaire, Switzerland). They germinated beautifully; the little rosettes looked fine and strong going into the winter. Came early spring with hot days and buds formed over each plant. I was thrilled! A few days later heavenly blue showed here and there. Then a freezing night, and next day all was gone. I have learned from this that one must somehow cover these early alpiners here against the night frosts of late spring. Spring here does not mean going on into summer at a steady and progressive pace, but an occasional falling back into winter, and worse, into hard freezing after maybe weeks of the most lovely weather."

EASTERN GARDENS VISITED

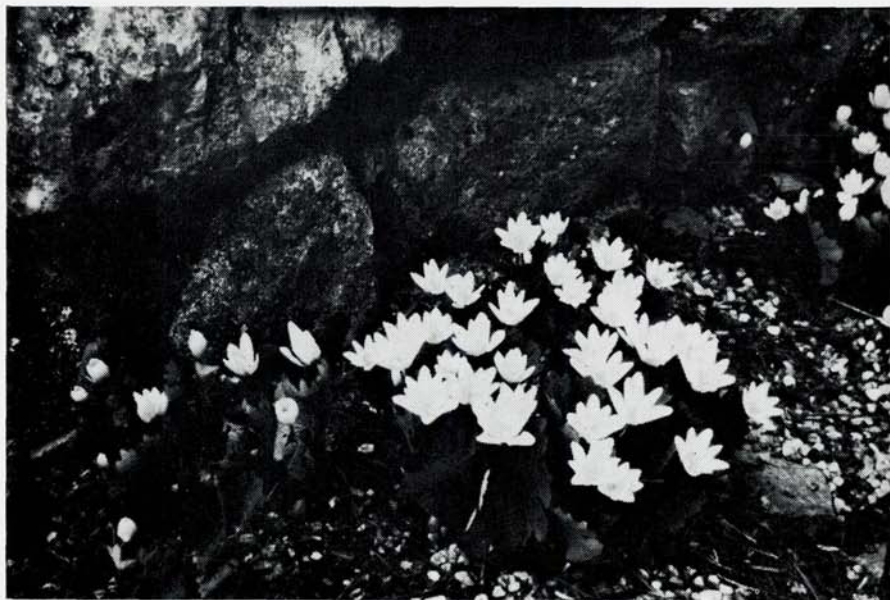
GRACE M. CONBOY, *Burnaby, B. C., Canada*

I have always wanted to visit the New England states in the spring. Having grown a number of eastern wildlings, I felt I would love to smell the fragrance of their home woods as the warmth of spring gently stirred them to action. So, when my dear friend, Mrs. Alice Baylor (who has written many fine articles about her lovely Primulas), wrote from Vermont and asked if I might accompany her to the Annual Meeting of the American Rock Garden Society at Longwood Gardens, Kennett Square, Pa., I thought very hard, surveyed the home front, and decided that I would go.

Reservations were promptly made and on May 1st I flew back to Montreal. (This was an experience in itself for before flight departure the authorities searched all luggage because of a bomb scare). May 2nd was a bright day and a busy four hours were spent at Expo '67. A trip out to the Montreal Botanic Gardens to see the conservatories was managed. One building there featured a beautiful display of Narcissi, Tulipas, Cinerarias, Azaleas, etc. This composition consisted of flowers that were past blooming in our northwest gardens, but would be bringing a glimpse of spring to Montrealers—for their outdoor gardens were, as yet, barely stirring from their winter dormancy.

On the evening of the 2nd, I left by bus for St. Albans, Vermont, arriving fairly late and spent the night at a beautiful old colonial residence, former Gov. Smith's, now converted to a motel. The 3rd dawned dull and settled into a rain-storm. I arose early (truthfully, the old-fashioned steam heating system nearly cooked me) and went for a quick, damp peek around the grounds. Shrubbery here was starting, hopefully, to leaf out and the grass was studded with pretty purple violets. Gradually the rain stopped and soon I was on my way to Burlington. Here, I was met by Alice's daughter and driven up to Johnson, Vermont, Alice's home. I enjoyed the lovely rolling landscape of gently wooded hills and neat little farms. It was hard to believe I had really arrived at Alice's pretty little home, situated on a high rise of land and surrounded with sweeping lawns, cozy groups of pines, with lots of trees at the back and across the valley. Her home is away from town and secluded. Here she can grow primroses to her heart's content. In her woods the silvery fiddleheads of ferns were emerging in company with the speckled leaves of *Erythronium americanum*. In her garden the early Juliana primroses were already brightening corners, despite the fact that snow had just receded. One could note the many small plants of numerous Primula varieties still semi-crushed but bravely stirring themselves to a get-up-and-go posture.

Preparations were completed and the following morning, May 4th, we were



Sanguinaria canadensis in the H. Lincoln Foster garden

Grace M. Conboy

on the road bright and early to drive to the Hochheimer home in Norwalk, Conn. The day was lovely and there were more delightful rolling hills, glimpses of historic Lake Champlain to the west, and the deciduous trees were just commencing to burst their leaf buds. Many, many stone fences stretched up through the wooded hillsides—mementos of past earnest farm folk who tried so hard to clear the rocky land and reap sufficient crops to sustain their families in the early days of American colonization. We observed the dainty wood hepatica and *Kalmia latifolia*, which I first thought to be a rhododendron. I had hoped to smell, for myself, the fragrance, so publicized, of the lovely trailing arbutus, *Epigaea repens*—but no luck. We did find the pretty mottle-leaved *Mitchella repens*, a dainty creeper that I have not found easy to establish in my woodland.

The high point of our trip to Norwalk was to discover that Falls Village, the home of our Society's president, H. Lincoln Foster, was on our route. We found that the Foster's delightful home was but a few blocks off our course. Unfortunately, no one was at home. We couldn't resist, however, taking the liberty of peeking around the delightfully landscaped grounds—a pure pleasure to have discovered a location with such beautiful rock out-croppings, series of waterfalls, etc. The artful manipulations of planting such a landscape, by a knowledgeable grower with a love of plants, has created a rock gardener's dream picture.

Spring was indeed evident, shimmering in the gold bosses of clumps of the sparkling white bloodroot, *Sanguinaria canadensis*, tucked into many nooks and drifted under some of the larger evergreens. A precious clump of the 'Flore Pleno' form glowed in the bright sunshine above the brown soil. Various colour tones of Anemones brightened the higher area of rock outcroppings edging the stream. *Primula farinosa* daintily shook lavender heads, as the many, many alpine plants in the area gradually were bestirring themselves for another season's cycle.

We were attracted to an array of purple-mauves across the bridge and up in a little valley. Wending our way up through the lovely garden, completely charmed with the multiple small waterfalls and the gentle gurgling of the stream whose edges, here and there, were almost touched by what could have been *Geum montanum*, or a golden caltha, we climbed to the beckoning little valley. *Primula denticulata* had been planted extravagantly and its glowing varied shades of mauves and purples stretched up in drifts. Projecting into these drifts were splash plantings of gay primroses in mass colours of bright blues and ruby reds. Reaching up into the birch and pine trees along the ridge were many varieties of rhododendrons, a few showing low blossoms. Returning to the doorway area, we admired the back patio, planted tufa and trough gardens. We were loath to leave but had to get on with our journey.

The restful visit to the Fosters' garden had revived us and the balance of the trip to Norwalk did not seem long. We were relieved to find Ridge Farms Road, though, and then the semi-secluded home of the Lawrence Hochheimers' tucked away on this quiet road mid silvery-gray trees, just budding out. We were extended the most delightful hospitality by our host and hostess. How very much in common most garden folk seem to have—apart from just horticultural interests.

It was late afternoon and the bright sunshine reflected itself many times over in the pleasant drifts of Narcissi casually planted beneath trees and about large rocks. A large graceful specimen of *Cornus florida* was budding out nicely at the entrance of the drive. A charming little scree garden provided just the right conditions for many treasures. *Shortia galacifolia*, past blooming, still was most attractive with its polished, lush new growth. The lovely *Phlox* 'Millstream Pink' that was mentioned in a recent article by H. Lincoln Foster was of particular interest and is indeed a choice plant—compact and vivid. Mr. Hochheimer took us up through the trim orchard to show us his very fine collection of heathers which seemed to flourish despite the prevalence of lime in Connecticut. One of the charming pictures, from inside, was the silver-gray tree trunks beyond the lawn, with naturalized Narcissi beneath and clumps of white dodecatheon. In the foreground, on the lawn, was a large bird feeder which had numerous visitors, giving me my first glimpse of the attractive Eastern Jay.

Always an early riser, awakened by the call of a Golden Pheasant, I arose and delighted in the opportunity of an early morning walk in the Connecticut woods. The morning was bright and dewy and it was a joy to meander down woody paths and discover Spring Beauty and farther on in a boggy area, drifts of *Erythronium americanum*—many past blooming, but some still with nodding, slender semi-closed bells, externally quite bronzy. I have grown these but never been favored with bloom. I also saw clumps of chimaphila in woody soil—but spring was still early and there was not a great variety of wildlings to be discovered yet. On my return, I was scolded by a Mallard drake who doubtless was taking his guard duty very seriously.

Later in the day, Mrs. Hochheimer took us for a drive through lovely treed streetways and wooded areas, eventually arriving at Mr. Lee's garden. As I have Mr. Lee's delightful *Handbook of Narcissi* from the American Horticultural Society, it was indeed a pleasure to meet the gentleman and see his remarkable collection of many varieties, labeled, and most of them at their very best. (Some of the earlier species were through blooming). An added bonus and an exciting experience to an old time bird lover, was the gleaming flash of a male Scarlet Tanager, who curiously watched us from a swinging branchlet when we first arrived at the garden. Mr. Lee's garden, planted on a sloping, woodland bank area, below and around his house, also contained many varieties of rhododendron and azalea, which gave a pleasant backdrop for the groups of Narcissi and

would continue with a further extravagant show of bloom when the Narcissi were past. Returning, I was particularly interested in the *Magnolia soulangeana* we saw. In the eastern gardens they seem to grow more compact, the colour appears to be deeper in the blossoms, but the bloom is smaller. Possible the cold winters and longer dormant period has something to do with this. *Cornus florida* was very choice and frequently seen. The bloom is much smaller than on our western *C. nuttallii*, but makes up for this in the quantity of bloom.

We were up and on our way again with the Hochheimers early in the morning—destination, Longwood. The route we traveled through Pennsylvania was, for the most part, deeply edged with woods, the trees well out in leaf, with *Cornus florida* very plentiful in many parts. Our first stop, according to the plans for the Annual Meeting, was at the Raden home (Lee Raden is the Chairman of the Delaware Valley Region of the ARGS). The Raden residence is of modern architecture, atop a hill, with a Japanese influence showing in the beamed patio, bamboo, and small formal stream within the patio. The spacious rooms, almost fully windowed, take full advantage of the view through the tree-tops to the man-made lake below. At the back, one looks out to the scree gardens above the wall on a sloping bank, closely protected by a grove of pines. A particularly pleasing phlox form, probably of *Phlox divaricata*, of a soft blue colour, bloomed casually about the planted areas. Mr. Raden was proud of his various unusual forms of weeping conifers, several of which edged the parking area. We followed the steps down the hill above the lake to his sunken greenhouse work area. Here were housed many varieties of alpine plants and more tender things. We were told the alpines had come from British Columbia, Canada, last summer and would be tried outdoors as soon as proper conditions could be provided. We hoped they all survive for him, even though winter conditions are so very different.

The buffet supper that followed was a huge success, with a wonderful turnout. How satisfying it was to put faces to names we had known for years. Mr. and Mrs. Lincoln Foster were there (so sorry to have missed us at home), Mr. Epstein, Mr. Barr, Mr. and Mrs. Bernard Harkness, and so many more. The delightful feeling of fellowship was also there and I do wish to thank everyone for making me so welcome. A member from as far away as British Columbia, Canada, seemed a pleasant surprise. Those who have visited the Northwest and know our amiable climate would be glad to have less extremes in the east, but then, from my first hand observations, it seems that they can grow plants extremely well even in their harder climate.

Eventually, Alice and I were deposited at our lodgings at the Red Fox Inn. This was another lovely old home which had been converted recently to a lodge. The grounds were well landscaped with many beautiful trees. Sweeping lawns stretched away from the house, and from a small lake in the meadow, Canada geese voiced their annoyance at intruders.

The weather had been so perfect that it just couldn't last. Next morning broke with heavy rain falling. We joined the group at Longwood Gardens and proceeded to see what we could of the Arboretum. First we visited the rock garden, which is constructed of large slabs of sandstone, creating a bold effect. Many early rhododendrons were in bloom with various compatible woodland plants, among them Trilliums and Dodecatheons. There were also primroses, Alyssum, Aubrieta, Viola, and Genista blooming in the more open places. The Japanese cherries, shading parts of the rock garden, were laden with blossoms, while others on the lawns dipped to the grass forlornly, rain-soaked. It was quite cool and the rain persisted, so most of us moved indoors to view the conservatories. The displays of various genera in different sections were superb. The large

entrance garden was completely landscaped with grass, palm trees, etc. Annual Phlox, new *Digitalis* hybrids, *Delphinium*, and others flaunted their gay notes in the borders. A number of varieties of tubbed lilies graced the corners, emitting a delightful perfume.

From the central house one could branch into the *Rhododendron* house which was spectacular with bloom and fragrance. Many of the more tender species are very fragrant. Some of the tubbed plants were enormous. Many varieties of ferns complimented the *rhododendron* plantings. Other sections that we browsed through were the Fern house, lush with exotic tropicals, moss laden; *Gesnerids*, flush with velvety bloom; cactus gardens; orchids in profusion and so many plants one did have difficulty in absorbing details. Everything seemed to be at its best.

The noon luncheon was informal, well attended and most welcome. Alice and I had what we felt was a real honour—to be at a table with Mr. and Mrs. Lincoln Foster and enjoy their congenial conversation.

Following luncheon, the general meeting was held in the Auditorium, where the necessary business was dispatched. The showing of slides followed and they were of excellent quality, though we left early to have a look in at the plant sale. We found this gathering a humming mass; business was brisk, to say the least. Some specialities were retained for a later auction.

The day passed quickly and soon we returned to the Longwood Banquet Hall for the banquet meeting. The food was wonderful and again there was a feeling of congenial fellowship. We did enjoy ourselves so much. We were so pleased to meet Mr. and Mrs. Elmer Baldwin, who are in charge of the American Primrose Society's Seed Exchange, and to have their company for the banquet. We also enjoyed the company of two gentlemen who were friends of Mrs. Doretta Klaber, and keen gardeners. Their names escape me now. The



A small portion of the garden at the H. Lincoln Fosters at Falls Village, Conn.

Grace M. Conboy

Citations were awarded after dinner, the details of which have already appeared in the *Bulletin*. It was indeed enjoyable to listen to the well-known participants of this portion of the evening.

The next morning—more rain and harder than ever! And this was the day when arrangements had been made to visit gardens in the general vicinity. We arranged with the Hochheimers to try to drop into one or two gardens near the route we would take on our return to Norwalk. We called at one place which would have been lovely in the sunshine, with its pretty stream and under-tree plantings. Its unique feature was a low rounded curve of built up sandstone pieces about three feet high, shelving back to house many succulants and alpine plants. It impressed me to the extent of presently being in the process of incorporating some slab sandstones, collected on one of our recent jaunts, into a similar outcropping; but of much smaller size.

We continued on to the home of Mr. and Mrs. Klaber. Doretta's books we have, and we did want to see her place and have a quick visit. Such a cozy little home with a cheery fire for a dull rainy day. We toasted our toes in front of the fire, briefly, then ventured out to see the interesting garden, semi-naturalized, which contained so many lovely woodland plants in company with primroses and bulbous things. During our short visit we were delighted that Doretta saw fit to show us many of her beautiful line drawings of violets, which she is doing in preparation for her new book. Time was fleeting and we dared linger no longer.

Mr. Hochheimer took us home by a different route. It was most unfortunate that the rain continued in full force and clouds shrouded most of the scenery along the Delaware River. We did pass beside some rugged cliffs, above the river, which reminded us of our British Columbia highways. We drove through a part of New York to take a friend home and then proceeded along the river drive to Norwalk. There had been heavy rain here, too, and we saw streams overflowing. We noted and liked the way Eastern highways out of the cities have retained a depth of woody park areas as a buffer between the freeways and the residential districts.

Soon back to Norwalk, we slept soundly, and made an early start the next morning for our return to Vermont. Alice and I picked a more direct route back, passing through different country and working north to a less advanced spring again. We even ran into snow which had fallen during our brief absence.

Everything seemed to move very fast, for I was back in Montreal by 6 p.m. that evening and away early the following morning on my flight to Vancouver. Could it be just a passing dream to have travelled so far and absorbed so much in such a short time? I think not, for I now proudly wear the lovely Dodecatheon emblem pin which Mr. Epstein was so busily selling at the cocktail party—when clients were in a receptive mood. Banter aside—it really is beautiful!

* * * * *

BLOOMING TIME FOR *SYMPHYANDRA WANNERI*—The editor is puzzled. The books available to him which mention this plant all agree that the blooming time is in "late summer." How is it then that his one plant, growing in partial shade, in a spring that has been somewhat retarded, started blooming at the end of April? From the number of buds it appears that it will be blooming for some time to come. One of two things must be wrong. Either the plant in question is not *Symphyandra wanneri*, or the books are incorrect. This plant was acquired late last year under this name and was quite small. Descriptions in books tally with the plant in all matters other than the blooming time. Does anyone have an explanation?

A POSTSCRIPT

C. R. WORTH, *Ithaca, N. Y.*

Perhaps because the recent article on plant collecting expeditions (ARGS *Bulletin* of January, 1967) aroused uncontrolled enthusiasm in its author, in 1966 I indulged in subscriptions to three expeditions to the Middle East, and also received some of the seeds collected on a fourth. While it will be several years before the merits of the plants grown from these seeds can be properly assessed, it may be that some readers would like to know what was received, especially as the returns were far greater than had been anticipated.

First, I subscribed to James C. Archibald's expedition to Iran, a full share of seeds and a part share of bulbous iris, which I later extended to a full share of bulbs. In early April a package arrived from Beirut, Lebanon, containing 15 lots of several bulbs each, which had been collected on the outward journey; most exciting among them were *Asphodelus acaulis*, *Cyclamen africanum* and *C. rohlfianum*, and *Narcissus bulbocodium monophyllus*. The main shipment arrived in mid-November and was hurriedly planted in the bulb frame amid snow flurries. This time there were 62 numbers, mostly of a single bulb each; about 15 of *Oncocyclus iris* (received in fear and trembling, yet most have grown and three have flowered), and the same number of bulbous iris, along with choice fritillarias, tulips, *Anemone biflora*, and some less exciting things. The seeds, received at the end of December, numbered 122 packets, and included nine species of *Dionysia*, many acantholimon, primulas, campanulas, gentianas (including the much-desired *G. gelida*, a yellow relative of the easy *G. septemfida*), daphnes, phlomis, one encrusted saxifrage, and many less familiar genera.

Brian Mathew had, at the last moment, decided to go to Greece and the Isles for bulbs and early seeds. Although well aware of Mr. Mathew's ability as a collector, I feared that most of his material would prove tender here, so ventured to take only a half-share. Perhaps it was just as well, for only a portion of the bulbs appeared this spring, but then bulbs often sulk for a season, so that next year the story may be different. He sent 54 lots of bulbs, one to seven bulbs per lot, but usually four or five; mostly crocus, several choice fritillarias, cyclamen, tulips, etc. Also in the shipment were 26 packets of seeds, largely monocotyledons; several euphorbias, and *Globularia alypum* were the only nonbulbous items.

Long awaited, but not received until March 26, were the spoils of the Albury, Cheese and Watson expedition to Turkey. When opened, the bulky package spewed cellophane packets all over the kitchen table. After several exciting hours of sorting them, it developed that 243 different numbers were involved, with 37 duplicates; campanula, dianthus, aethionema, draba, primula, gentiana, acantholimon, and many other genera.

Through the kindness of Rear Admiral Paul Furse and the staff of Wisley, I received a number of packets of seed which Admiral and Mrs. Furse had collected in Iran and Afghanistan, including some extremely rare bulbous iris; and from another correspondent, two of the dionysias which they had harvested.

Although germination generally has been erratic and spotty in a most temperamental spring, the host of seedlings includes several dionysias, acantholimon, *Gentiana gelida* and *G. olivieri*, *Primula gaubiana*, *P. capitellata*, *P. auriculata*, campanulas, (including two annual ones which have flowered and proven most attractive), digitalis, poppies, drabas, to mention only a few. Some will doubtless not survive, and others may be of minor interest, but surely all the expeditions

have rewarded me most generously. When, in June, belated word was received from J. M. Watson that collecting is being continued in Turkey this season, no time was lost in mailing a check for shares in both bulbs and seeds.

JERVIS, A HEMLOCK OF ODD FORM

G. G. NEARING, *Ramsey, New Jersey*

Now that the dwarf hemlock, Jervis (*Tsuga canadensis* 'Jervis'), has begun to attract the attention of conifer enthusiasts, the whereabouts of the original plant and the record of its discovery may be of interest.

One Sunday during the summer of 1943, or perhaps 1944, I was leading the Torrey Botanical Club through the hills south of Port Jervis, New York, and just within the state of New Jersey. The terrain there is a series of parallel ridges, confusingly similar, and we soon lost our way.

While groping about, we came upon a hemlock about seven feet high with a most peculiar structure. It was crowded in a grove of oak and other trees, among which it thrust out branches ending in clusters like big fists with hundreds of tiny fingers. By no stretch of the imagination could it be called ornamental, but something told me that if it had been in the open, less crowded and shaded, it could have developed into a thing of beauty. The branchlets, massed together in heaps, had a pleasing green foliage, and though its growth was otherwise somewhat open and straggly, this was plainly due to dense shade, while in the past, forest fires had evidently burned out many of the lower branches.

Among the dead leaves heaped around the trunk, I found that perhaps a dozen small branchlets had layered themselves. This is unusual with hemlock, and suggested that cuttings from it might root, though cuttings of large hemlocks usually do not. So I took up a couple of the layers, and brought them to my nursery, at that time in Ridgewood, N. J.

In 1945, a flash flood swept my nursery, destroying much equipment and many plants, so that I had to give up and get rid of what remained. One layer of Jervis was in a pot, and I gave it to Edward Thuem, then in Harrington Park, N. J., who planted it in his rock garden, where it developed, as I had hoped it would, into a pleasing, compact dwarf. He propagated it, and later gave me back one of the propagations, which is now in my rock garden.

Meanwhile I had offered to show him the original plant, so that he could get cuttings from it. We hunted all day, but could not find Jervis. Exasperated, I spent two later days in the search, but without success. Years later, after Thuem had sold the plant I gave him, Henry S. Fleming and I spent another day hunting for the original, and found it.

Fires, meanwhile, had further spoiled the lower branches, and burned out the remaining layers, killing them completely. But the upper branches persist, even under increasing shade. More recently new fires have still further injured it. I estimate the age of Jervis at perhaps 150 years. Though far from any habitation, it evidently stands on private property; whose, I do not know.

Propagations from it grow a little more than an inch a year, spreading about as wide as high. The color is darker than most hemlocks. It looks as well after a severe drought, with scarcely any watering, as at the beginning. The branchlets twist oddly, giving it a unique texture, and remain densely clothed with foliage even when many years old, but they do not widen greatly. These characteristics give it a pattern different from any other hemlock, the nearest being Hussi, a somewhat faster growing and more fan-shaped form.

INTERCHANGE

DRYAS OCTOPETALA—In a recent *Bulletin* (April, 1967), Elizabeth Peterson ended a paragraph on *Dryas octopetala* with these words, "How far south do these plants grow in gardens?" An answer came from Mr. Paul J. Buckman, a member who gardens at Buckingham, Pa. He wrote, "My rock garden is situated in the southeastern most tip of Pennsylvania, slightly north and east of Philadelphia just a few degrees out of the Washington, D. C. and Delaware hardiness zone. In this region we have experienced winters with temperatures to 20 below and hot, dry and humid summers, sometimes with temperatures in the high nineties for weeks on end, with droughts lasting from April till September.

"My first experience with *Dryas octopetala* goes back to 1945 when I planted my lone plant on the southeast slope of a rock garden receiving direct sun two thirds of the day followed by afternoon high shade. Here, in medium rich loam, but well drained, that one plant thrived and bloomed year after year till the summer of 1960, when suddenly it succumbed to the winter ravages. It had expanded to a plant approximately fifteen inches in diameter, always rich and green, even into winter. I always suspected that it truthfully expired with "age", but for the years of thrills and pleasures it afforded, I felt it deserved its well earned permanent rest.

"In its place is now another planted three years ago, just finishing blooming eight flowers and displaying fluffy seed plumes. I shall never be without *Dryas octopetala*, but your description of *D. tomentosa* whets my appetite and I shall scan all the source lists till I find it."

PEST CONTROL—Rock gardeners are in truth a folk who look on the bright side of things. They must be optimists or they would not attempt to maintain their gardens in health and loveliness in the face of all the obstacles Nature contrives to make such maintenance difficult. Perhaps a 40-page booklet called *A Guide to Safe Pest Control Around the Home* may be of value to many gardeners, for it contains a great deal of useful information between its covers. This booklet is officially known as *Cornell Miscellaneous Bulletin 74*, and can be ordered under that name by sending 25 cents to Publications Mailing Room, Building 7, Research Park, Cornell University, Ithaca, N. Y. 14850. Organizations can receive a 20 percent discount on orders of 100 or more. Money should be sent with order.

CZECHOSLOVAKIAN ACTIVITIES—Mr. Jos. Starek, of Prague, Czechoslovakia, writes, "The local ARGs members have established 'The Study Centre of ARGs' for the research of the High tatra flora. More than 1000 slides of alpine plants have been made. Some of them will be sent to the ARGs slide competition." In a letter of May 10, Mr. Starek wrote, "On 22nd and 23rd April local Amateur Gardeners held an interesting and unusual 'International Micro-Festival of Flower Growers.' About 500 amateur and professional gardeners met in Prague. Some of them were from neighboring countries. 'Prague was the gardener's bridge between East and West.'" He said that most interesting lectures were delivered by Dr. Willy Seyffert, well-known German author of books on gardening; by Mr. Volkmar Kober, whose subject was "Botanical Specialties in my Garden;" and by Mr. Hermann Hald on "Iris and Lily Species in Modern Gardens." Mr. Starek closed with, "Micro-Festival was a very good

occasion for cordial talks and for the establishment of permanent friendships. We would like to organize it regularly every year and for the next time, we hope, we shall meet with some gardeners from Holland, France, Switzerland, England, and sometime, also, with ARGS members from the United States."

DEAD OR ALIVE?—Dr. Carleton Worth, well-known to all *Bulletin* readers, relates this humorous experience: "At the 1961 Conference in London, a *Raoulia* species was exhibited with a card relating to its acquisition from New Zealand. A most distinguished member of the Alpine Garden Society (to whom I had not been introduced) and I bore down on it at the same time and stood for some moments in profound contemplation of the treasure. Finally, dispensing with the formalities, we asked simultaneously, 'Is it alive or dead?' Whereupon the distinguished member whipped out a hand glass and subjected the vegetable lamb to a prolonged inspection, eventually coming up with the verdict that no sign of life was visible. Incidentally, the poor lamb had lost much of its wool and was quite naked in spots. I wondered how much longer the proud owner would rejoice in the unwitting possession of a corpse."

MORE ABOUT WEST AUSTRALIAN PLANTS

BRIAN HALLIWELL, *Edinburgh, Scotland*

A summary of a talk on West Australian plants by Dr. A. R. Kruckeberg appeared in the April edition of the ARGS *Bulletin*. Dr. Kruckeberg is reported as saying that most of the plants mentioned in his talk would be tender at between 45 and 50 degrees F. The summary then mentioned a number of genera, including *Banksia*, *Boronia*, and *Callistemon*. Although it may be implied that of the genera mentioned, it was to the West Australian species he referred, quite a number of species of these genera are hardy at much lower temperatures.

Actual winter temperatures are not in themselves a sole indication of hardiness; it is rather the general weather pattern that determines this; such factors as annual rainfall, the time of the year it falls, the dry seasons, prevailing winds, and the duration and intensity of winter cold.

I have had experience in growing a wide range of Australian plants, including many from the genera mentioned. This was in the Christchurch area of New Zealand which has a rainfall of around 20 inches a year, most of which falls in the winter. The summers are warm to hot with 65 degrees F. the average, but rising frequently into the upper eighties, whilst the winter average is about 40 degrees F. with frosts common although of brief duration, and temperatures as low as 16 degrees F. often recorded.

Banksias will only grow in the warmer gardens where temperatures are not likely to fall below 22 degrees F. Those grown successfully are *Banksia marginata* from Tasmania, which was sometimes used as a windbreak near the sea; *B. serrata* from Tasmania, New South Wales and Victoria; *B. collina* from Queensland, New South Wales, and Victoria; and *B. quercifolia* from West Australia.

Boronia megastigma is one of the most beloved garden plants in New Zealand on account of its delightful perfume, and is widely grown. Other species not quite so popular because they lack a perfume, or one as strong as in *B. megastigma* are, *B. heterophylla*, and *B. pinnata*. All species are from West Australia and can withstand temperatures as low as 16 degrees F. without suffering harm.

Callistemon citrinus from Victoria and New South Wales, and its varieties,

are amongst the commonest of garden plants in New Zealand. Other species are grown, but to a lesser extent and include *C. pinifolius* and *C. rigidus* from New South Wales; *C. coccineus* from South Australia; *C. pallidus* (syn. *salignus*) from Tasmania; and *C. speciosus* and *C. phoenicis* from West Australia.

Here in Britain a number of species from Australia can be grown in the milder parts of the south and southwest of England, and in the gardens along the west coast of Scotland. The annual rainfall in these places is quite high and fairly evenly spread throughout the year. There is much less sunshine than in New Zealand, and winters are often colder. *Callistemon pallidus* is the hardiest species, and in some areas has naturalized itself on old walls, but *C. citrinus*, *C. speciosus*, and *C. coccineus* are all sometimes grown.

It is realized that these plants would be impossible to grow outside in much of the United States, but they are an indication of what could be tried in places that fall within the hardiness zones VI and VII.

NOTES FROM THE NORTHWEST

ELIZABETH PETERSON, *Seattle, Wash.*

MAY AND THE TOUR SEASON —A cold late spring was made more bearable by the sight of what can be done with a long, narrow suburban lot. The A. K. Frees have used curving grass paths, now narrow, now wide, making it possible to carve out beds for plants with varying needs and to accommodate several flowering trees which would otherwise seem inappropriate for a small property. The paths end eventually in a small propagation area, and in one corner there is a work area with its own tiny brick-paved patio and benches.

Open to the hot western sun is a steep scree slope made from reversed turves overlain with about four inches of grit and rocks brought personally from eastern Washington by the Frees. Here many of the temperamental desert plants look healthy and insect-free. The plants are spaced here so that there is room enough to observe differences in plants of the same species collected from more than one locality. The difficult *Campanula piperi*, an Olympic Mountain endemic, of waxy, spatulate, dentate leaves and large blue flowers, seems perfectly at home in this excellent drainage. Near it thrives *Campanula pilosa*.

The problem of graveyard markers in a garden has been solved by stamping out numbers on plastic tape and affixing them on the heads of fairly large nails by their own gummed backs. Then a numerical listing is typed giving the names of the plants as numbered, as well as origins. It is hoped that durability of at least five years will be proven for these markers. Everyone is anxious to know how this experiment works. There is little that is less enchanting than to view a well-tended rock garden littered with plant labels, often larger than the plants they identify. Then there is the problem of reading the names on the labels without lifting them. Many times the writing is faded, covered with dirt, and in some instances the names were illegibly scrawled to begin with.

In the more spacious garden of Mrs. Anton Schwarz is a New England touch; at the front of the house is a bird bath directly centered in a circular lawn which is bordered by beds of *Primula polyanthus* (instead of buttercups and daisies) under the shelter of ancient apple trees. The color groupings of these glorious primroses shade into each à la Gertrude Jekyll. Many of the pastels—clear blues, peaches, pinks, and soft yellows—should go well with such light tulips as 'Ivory Gem' and 'Rosy Wings.'

Partial shade, rich soil, and some winter protection should enable a few of

these Polyanthas to be grown in almost every part of the United States. Soil should not be too rich, however, as rank growth, flopping stems, and weak petals may result.

The garden at the home of Mr. and Mrs. Rodney B. Allen progresses slowly, but when a corner has been completed it bears the look of having the perfection of nature's design and the stability of antiquity. Living in a woods which have not yet been disturbed overmuch, the Allens can drag old logs up the hill to hold the soil and benefit the ericaceous plantings. The land slopes sharply to the house and has been braced with a brick wall which places the plants nearer eye level and permits early attack on invading weeds. This area has been named by the Allen children, "Mother's Tidbit Garden."

A particularly nice scene has been provided by a moss-covered root, looking like driftwood, which extends curving arms at its side to shelter some beauties. It is wide enough at one end to have an evergreen hand of *Vaccinium vitis-idaea minus*. In the hollow is a tiny "heather" bed of *Cassiope mertensiana* v. *gracilis*, prostrate, with its whippy stems lying multidirectionally. Next to it is a bright green, upright *Cassiope* 'Muirhead' (*wardii* x *lycopodioides*), and offsetting them is a taller, vertical, thick-stemmed, gray-green *Cassiope wardii*. Balance and background for the "driftwood" is provided by an Alaskan-collected *Pinus contorta* which shows perceptible differences from the better-known Shore Pine.

Another planting of much charm consists of three lilac-flowered *Daphne collina* var. *neapolitana* underplanted with twiggy, green as well as bronze, ovate-leaved, decumbent *Gaultheria depressa* from New Zealand. (Underplanting should surely become an art form receiving as much attention as does bonsai). This *Gaultheria* may not be hardy over all the country, but coming from South Island which receives frost and snow, it certainly should be tried.

ACROSS TO THE OLYMPICS—Harold M. Johnson, of Shelton, Wash., has roamed the Olympic Mountains for many years. He presented the cream of his crop of slides recently. His opening sequence was of mountain goats. They looked big, white, fluffy, and bored. Usually shy, these goats had interrupted their mid-day nap for a brief contemplation of the photographer, then lay down again (probably because they knew they were protected in a National Park). The rest of his slides were of flora, not fauna.

Gray foliage is always popular as a contrast to greens and bronzes in the garden. *Potentilla villosa* has gray in abundance with its densely silvery leaves, silky on top and the bottoms tomentose, which arise from a woody caudex. The five-petaled flowers, like roses, are a soft, light yellow, blooming in May and June, in a few-flowered cyme on a three-inch stem. They are reported from the State of Washington north to Alaska and over to Siberia, are arctic-alpines and appreciate sun and sandy loam.

A somewhat common high forest plant not often mentioned is *Campanula scouleri*, sparse and few-flowered in the mountains, but a lush mass in Mr. Johnson's garden. The elfin flowers are half an inch or more long, pale blue or white, variable as are nearly all campanulas, petals reflexed and styles exserted, nodding from three-inch stems. Although recorded to twelve inches in some areas, these flowerbells from the Olympics have remained dwarf in the garden. The plants do not mind sun in this area if given a good mulch, however, for the rest of the country they should probably have partial shade in gritty soil. They are reported in the Coast ranges from California to Alaska.

A fairly rare endemic is *Viola flettii* which is on the National Forest Service Protected List, and obtainable only with the permission of an officer. Its flower is purple with a rosy tinge. This plant is not too easily observed and tends to

associate with *Campanula piperi*. They appear in steep, shadowed rock crevices and sometimes in the loose talus below. If *C. piperi* is ever completely tamed in gardens, perhaps this violet, too, may be. Gardeners, however, who have had such rarities lose them all too soon to slugs, and it is advisable that the amateur not collect either.

OMNIUM-GATHERUM

It is seed harvesting time again! Remember what happened last year when a new director of the Seed Exchange was enabled to set a new record. There were more contributors than ever before; a greatly increased number of listings; seeds from plants not previously listed; contributions from at least ten countries other than the United States (from nine members who live in Czechoslovakia); and an increase in the highly interesting notes concerning seeds of unusual plants and their culture. It was a fine first year for Mr. Lawrence Crocker.

With the enthusiastic help of our members, the current year's seed exchange can be made even more successful. It is fun to gather seeds in the wild, and in one's garden, too. There is also work, and the satisfaction that comes from work well done. We all know that to properly care for seeds after collecting is work, as is the preparing of them for shipment to the Director. But the better you do this necessary work, the less work there is for Lawrence and his assistants, and the better the seed list will be.

Remember, too, that November 10 is the dead line. Contributions should reach Lawrence at 3355 Jacksonville Highway, Medford, Oregon 97501 by that time, *or before*. Try to beat the dead line! Make every effort to do this. Again, you will be lightening the load that Lawrence must carry.

Last year there were seeds of many unusual plants offered. They were distributed to members in many parts of the world. It is too much to hope that in every case success resulted. Undoubtedly, the successes outnumbered the failures. Our readers need to know about these successes. Please write about them; even a paragraph will help. The reporting in the *Bulletin* of such experiences with unusual plants will spread needed information among our members, and, in time, the "unusual" appellation will be removed from these plants. There will always be others to take their places. In this way our gardens need never become static.

Enough of this! Go now and pluck the seeds that need collecting. You know the rest of the routine that must be followed to provide Lawrence with the essentials for another record year of ARGS seed dissemination.

An error has been noted in the July *Bulletin* on pages 90 and 91. Thrice the genus *Owstrowskia* was mentioned. There is no such genus. It should have been *Ostrowskia*. Please make the necessary corrections in your copy. Sorry!

While we are in the error admitting mood, it might be well to admit to poor judgement in placing the Index Questionnaire on the inside back page of the Index. Members have pointed out that since it was hidden there, it was no wonder that most readers did not see it and, of course, did not use it. Others observed that to use it at all meant that the Index had to be mutilated, thus impairing its value. Sorry, again!

When you were in the mountains this year, or in the woods, the fields, or in the desert—wherever flowers bloom—did you find something that pleased you

greatly, something that made you especially happy at the moment, something that you stored in your memory to be recalled at odd moments with renewed pleasure?

The editor had such an experience this summer on the slopes of Mt. Rainier. Two years ago he came upon what appeared to be a dwarf *Campanula rotundifolia* growing at about 6300 feet elevation. It was not the elevation that caused the plant's dwarfness, for normal plants of six to eight inches in height were found at higher elevations in dissimilar situations. This dwarf was sheltered by a not too large rock which was partly covered by crowberry, *Empetrum nigrum*, glistening with a fine crop of jet berries the size of BB shot. The campanula, all of one inch high, supported several full-sized blossoms, each one an inch long. Each formed a perfect triangle—one inch of horizontal pumice-strewn earth, one inch of upright stem, and a diagonal inch of bright blue blossom. The lanceolate stem leaves were in keeping with the plant's tiny structure, but the roundish basal leaves which give the plant its name seemed to be missing. The bell, being natural-sized, seemed at first glance to be partly floating in the air with only the tip of one petal resting on the ground. A closer look revealed the thread-like stem with its tiny leaves. It was a remarkable plant!

Again this summer, but a few days ago as this is being written, the editor was overjoyed to find this plant. And again it gave much pleasure to those of us who saw it. When first seen this year it had but two buds. Two days later one bud had opened and there was the fairy triangle again; gray pumice, fragile stem, and the beautiful, pendant bluebell. It was like greeting an old friend. There was satisfaction in having remembered the exact spot. There was relief in knowing that no harm had come to the lovely plant—harm from natural causes, or harm from collectors. Of course, collecting is not allowed in a National Park, but since this gem lives within ten feet of a trail trodden by thousands each summer, someone might have been tempted. A disquieting note was interjected when it was observed that a small leaf of *Lupinus lyallii* had appeared within half an inch of the campanula, and being a more sturdy plant in that pumice-laden situation, it was feared that, in time, disaster might overtake the little campanula.

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