

BULLETIN

of the

AMERICAN ROCK GARDEN SOCIETY

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Albert M. Sutton, Editor

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THREE VISITS TO FLAG MOUNTAIN

CLAUDE A. BARR, *Smithwick, S. D.*

Campanula petiolata, *Campanula rotundifolia*—two names for the same plant? Not exactly. Rydberg and many other knowing botanists have felt that the name 'petiolata' properly applies to a rather distinct variation in *Campanula*. When I first saw a typical *C. rotundifolia*, it matched exactly my memory of a picture I had clipped and pasted into a scrapbook in my callow childhood; a low plant with short plump bells of appealing form. When I began to learn the western plants, McIntosh, of our South Dakota School of Mines, identified *Campanula petiolata* for me. Of this form or species the late D. M. Andrews of Boulder, Colorado, said, "Larger and more floriferous than typical *C. rotundifolia*". He might have added that while there are sometimes rotund leaves at the ground, there are often only linear leaves on the plant and that the flower is regularly larger and longer. *C. petiolata*'s color is blue-purple. Once I possessed a pure albino and lost it for an unknown reason, affording a motive for many years' search for another.

Castle Creek, famous for trout, drains a remote and rugged portion of the Black Hills where, as reported, General Custer and his men, coming in from the west, gathered from an unusual bounty, wild flowers to fashion garlands about the necks of their horses. The south wall of this upper valley is densely clothed with spruce, the north more openly forested with pine and accented by exposures of massive limestone, one of which, "The Castle", has given the region its name. A bit to the north lies the rolling, treeless, higher ground of Reynolds Prairie.

One July I found the sunny road banks of Castle Creek a hotbed of the harebell—but no whites. I recalled that the flower had been sighted briefly long before on the southern border of the prairie. It would bear a search.

In the last of July or the first days of August, 1962, I pulled away alone, as usual these days, to see Reynolds Prairie. A forest ranger had told me that the sizeable stream that came down to the secluded spot called Mystic was Castle Creek and that from Deerfield and Reynolds Prairie it traversed a very beautiful canyon. I planned to see the canyon and the prairie all in the same day. Up stream a mile or so and facing the sun and next to the north wall was a comfortable log house, heavily banked with the usual showy flowers, including oriental poppies blooming very late in this cool and high locality. Across the neatly graveled roadway was an extensive lawn or small park of mowed or

closely sheeped bluegrass, studded with magnificent native spruces 60 to 80 feet tall. It was one of the most lovely spots I had ever seen. I had walked back and was undoing my camera when clouds came over and spoiled the sparkle.

A mile or two farther was an unoccupied picnic ground of the forest service. Through the miles not a living thing was seen. The place was wilder, weirder than I had ever imagined. From time to time I stopped to examine rocks or a recurring coarse yellow composite. There were talus slopes of pure rock right down to the wheel tracks; odd splinters, slabs, polyhedral fragments. At times one looked up to speculate on how far apart the walls were hundreds of feet above.

Was there a fork in the road? At any rate my road began to climb more rapidly, up a dry draw for some miles and came out suddenly onto the north end of Reynolds Prairie at the old Reynolds ranch. The prairie is a ruggedly rolling stretch of about three or four miles. A well-built graveled highway traverses it mainly north and south. Cultivated fields were frequent in the more rock-free swales. Meadows, pastures and roadsides, that very wet year, were seas of wild flowers, climaxing all my years of plant hunting.

What was dominant? The great lavender *Erigeron subtrinervis* or *Campanula petiolata* perhaps, certainly the bellflower close up on the rawer road cuts. *Monarda mollis* was not far behind. In places *Penstemon glaber* or some goldenrod made the best show. Near the forest on the west *Echinacea angustifolia*, rich pink, tending to red in the fresher blossoms, and free from lavender, was striking. Yarrow, native or adventive, was everywhere. Toward the south and on a whole hillside down toward Deerfield was *Astragalus striatus* in two-foot wide cushions of bluish purple, tinted with pink-purple, intermixed with the purple harebell. Mostly there was a hodge-podge of color. I should have made a list.

Midway of the open country a road branched to the west. Straight up the short stretch of road appeared an intriguing sharp pinnacle of whitish rock with an observatory, reminiscent of a watch tower on the Rhine. The sign read, Flag Mountain Forest Lookout, four miles. Who ever heard of Flag Mountain? Not I, though I had been many times within a few miles of it along Castle Creek. But there it was, 6,937 feet high, as I learned, and possibly less than a mile away. The winding road climbed half of its way through the prairie flowers. In the forest the great gray arrows of *Balsamorhiza*, out of flower, were conspicuous and a bit of a surprise. There was an occasional blossom of *Calochortus gunnisonii* that lower down had flowered by the unexpected acre this wet year. When the limestone was reached many crevices were packed with the tiny *Pellaea glabella* var. *occidentalis*. Several goldenrods and other yellow flowers were there, too. The road continued to within 60 feet of the summit to a small parking space and a picnic table.

The final climb was through pure rock garden, plenty of rock with man-made steps. I listed 74 species, I believe, many not in flower. Included was much of the non-climbing *Clematis tenuiloba* whose mere presence is gratifying even when out of flower.

On the outermost point there was scarcely room for the tower. On the farther side, a scary precipice. Some fissures had been concreted up to make a negotiable path about the base and I examined the foundations carefully before venturing up. The view was one of the best, some miles in all directions before comparable heights were encountered.

Wedge into minute crevices, from which good roots could not be extracted, and about the only plant growing about the base of the tower, was what proved to be *Erigeron trifidus*, with bright green leaves, a tiny daisy or two and some

seed. If I were Methuselah I imagine I would still thrill at my first sight of a treasure like that.

There were half a dozen steps down from the tower base, two steps across, then several steps up to a wider and rougher area where was painted in foot wide yellow lines a cross mark indicating a helicopter landing. The more or less knife-like ridge stretched on for 80 or 100 yards, the more and more disintegrated remnant of the once massive stratum of the Pahasapa Limestone. It was a dwarfing situation. A very few small ponderosa pines were scattered along the rocks. *Potentilla fruticosa* was flowering up there at four inches.

Beside the steps up to the landing spot, and here and there plentifully beyond, was the find of the day, manifestly a *Phlox*; a tiny one with leaves hardly more than a quarter of an inch long and as much as an eighth wide. In the Black Hills such width brings to mind *Phlox alyssifolia*, but in that species such longitudinal brevity does not occur, nor was there any detectable white margin to the leaf as in the alyssifolia complex. No stem more than half an inch long was found, no trace of longer stems that might have been killed by hail. More puzzling still, there were no seed capsules, no calyxes, no sign at all that there had been bloom. If this plant were *Phlox alyssifolia* that had been beaten to the ground by hail, why not more growth, why not a leaf of usual proportions, since there had been plentiful moisture?

Heavy clouds had been boiling in from the west. A few big drops began to fall. Still I hunted for a place where portions of the rock could be loosened and livable roots recovered from the black humusy loam. The rain came heavier and there was some hail. With a few good roots, I ran for it, not too wet, and made the way down safely over the slippery dirt road beside, or in, rut-full rivulets. Out at the highway everything was covered with water. It was well after six o'clock and I had over a hundred miles to go. As long as daylight lasted I traveled slowly and saw all there was to be seen. A few times something of interest brought me to a stop. One was a rather large *Senecio*, name not at hand, that seemed to have garden character. There was no white campanula, only one or two pale ones.

At the first opportunity I went again to Flag Mountain, by a more direct road, and found much of the *Phlox*, but no more clues. From my description, Dr. Wherry tentatively named it a western species that had not been found in the Black Hills, and requested herbarium material. In late fall when my little plants began to dry out their older leaves in preparation for the winter, barely perceptible whitish margins were noted. Perhaps after all this plant did belong to the alyssifolia complex! I thought of the very dwarf *P. diapensioides* that the late Mrs. Clara Regan once sent me from Butte, Montana, and that I failed to establish. I hoped the flower would be of attractive form and good color.

Spring came and most of my plants had survived. Bloom began in mid-May, pink, medium size, attractive. Three weeks, I figured, would bring bloom on the heights, but it was five or six before I got away. My little plants continued in flower, a good promise. At Flag Mountain the phlox was in its prime, scattered bloom appearing along the road after the limestone was reached. At the tower voices were heard. The exterior stairway was blocked above by a heavy trap door, so I retreated and went about exploring. I was soon to experience a greater and more sustained thrill than at first discovery. Here was certainly something new and fine. Phlox was in bloom everywhere, good form, good pink color with only occasionally a pale one, no narrow-lobed or pinwheel corollas, quite frequently the nicely rounded blossoms I so delight in.

Soon a boy came down from the tower to keep me company. Thirteen, slight and lithe, he sprang from rock to rock with the surefootedness of a chipmunk.

His mother was on duty that day; they would spend the night and be relieved on the morrow. The boy was mostly interested in animals, he said, but soon he was spotting phloxes of special quality. We made a full thirty selections with good roots, one with so much color one questioned whether or not to call it red. Two other plants, new and unknown to me, were discovered and a few roots collected.

On the summit and down along the road leisurely selections were made for herbarium use, with an attempt being made to indicate as much variation as could be found. Above one precipice quite large flowers were secured, as large as some forms of *P. alyssifolia*, but they were clearly not of that species. The whole mountain was covered with phlox, at least as far as the Pahasapa extended, perhaps three quarters of a mile. Thirty specimens were gathered. Dense forest closed in on the trail and the phlox was no longer seen. Another mile and a lesser limestone eminence was close. I would like to have seen if my find dwelt there, too, and there were other heights a mile or so away to the west. But the hour was too late for further exploration. Now in September, my plants are nearly all safe in the home garden and some day we can expect Dr. Wherry's final word on identity.

It is only fair to report that on the second trip, *Erigeron subtrinervis* had reached its maximum, painting the hollows gloriously, with *Erigeron glabellus*, a smaller, lighter lavender, supporting. *Solidago rigida*, heretofore regarded as a coarse weed, was so beautiful on the slopes, I had to walk among them in admiration. On this spring's trip, *Cerastium strictum* and *Delphinium menziesii*, white and deep blue, and many others painted a different picture. Up in the woods *Balsamorhiza sagittata*'s intense yellow sunflowers glowed astonishingly above their whitish foliage, with now and again their color heightened by contrast with the blue of *Delphinium*.

ROCK GARDENING IN CALIFORNIA

MRS. D. S. CROXTON, *Folsom, California*

Folsom is situated at the edge of California's Great Central Valley and on clear winter days one can see the peaks of the Sierra Nevada Mountains as a white line against the horizon. When we moved here there was a new garden to lay out on bare soil, consisting mostly of gravel banks, rock, and clay. Knowing that temperatures during the warm season often soar above 100 degrees for days at a time, the idea of growing rock garden plants, much less alpiners, never even entered my head. In the process of digging and mixing in material that would improve the soil texture, we took out so much gravel, boulders and rock that it was not long before I gave in to the temptation to set up a rock garden.

Our first effort was quite modest. A silvery Pfitzer juniper with a particularly handsome shape served as a focal point on a small hillside, banked by local rock. Around it, that first spring, bloomed a mass of California poppies (*Eschscholtzia californica*) in various colors. We learned soon to use only the biggest rocks for our edging and banking as it was easier to control the weeds that way. The gold dredges left huge piles of coarse material all around here and we became frequent visitors to the "rock piles", collecting the pieces we needed for the garden.

We have lived here for three years now, and although I realize that this time span can only give us a relatively short and incomplete experience for any given area and climate, here are some of our observations.

When one considers the adaptability, life span, and the growth of rock

garden and alpine plants, several important factors come to mind: climate and elevation, soil and drainage, and exposure. The adaptability of a plant, to some extent, depends on whether the soil, drainage, and exposure conditions can be sufficiently adjusted to meet its needs. One cannot expect the impossible, but much can be done.

Two other considerations are almost equally important. One should have ample time available for care and observation. In fact, most of my losses or failures occur on account of my failure to meet this requirement. The other is the planting time. Established plants can cope far better with adverse conditions than newly planted stock. Let's take up some of these items separately and start with climate and elevation.

The *Sunset Western Garden Book*, a very useful part of our reference library, lists a growing season of 240 to 270 days for the Central Valley. There are yearly variations, of course. Summers are very hot but an unusually cool year, like 1963 for instance, will give much encouragement. All of my plants are thriving and seemingly I could do no wrong. Our elevation here is about 300 feet above sea level and as such can be termed "low". (Folsom's elevation varies from 150 to 350 feet).

The climate is one of the main reasons we have to work so hard here to keep our various pet rock garden plants happy. Our summers are so warm that it takes all our ingenuity to devise ways and means to soften the effects of the burning heat and bright sunshine. Many plants that originally liked to grow in a sunny exposure would simply shrivel up if one were to place them in an open sunny position here. Yet, to keep growth in character, they need a certain amount of sunlight and it is up to us to find out how much to give or to withhold.

The first excessive heat wave will sometimes strike by the end of May, putting an end to the pleasant early-starting spring season. Plants that are



Rock Gardening on a Raised Bed

Mrs. D. S. Croxton

newly moved or transplanted usually are not sufficiently established to cope with such heat. Many mail order plants that reach us in the spring are put in pots or cans and allowed to grow on in a shaded cold frame until planting time in fall, as soon as the weather becomes cooler. This also gives me a chance to move the potted plants about to observe their reaction to various exposures.

A lucky circumstance is that we have ample water, a fact that cannot always be taken for granted in this state. Also, we have a dry heat to contend with in which moisture quickly evaporates. This can mean that plants may dry out beyond repair if one is not watching, but the cooling effect of evaporation can be used to counteract the heat. Mist soakers and "Rain Bird" sprinklers are used extensively. In our hobby greenhouse, built by my husband, an evaporative cooler maintained a temperature 10 to 15 degrees cooler than outside this summer, and many of our container-grown plants and alpiners seemed happy there. What about a "Summer Alpine House"? As soon as cool weather comes all hardy plants are taken out of the greenhouse, to be replaced by the tender ones.

Our winter has periods of rain that oversaturate the soil and consequently the very best drainage is required. In between we often have sunny weather with frosty nights and then again days that the "tule fog" blankets the valley. The winter season, therefore, is much milder and wetter here than many alpiners are used to originally and their dormancy periods cannot be as long. Would this make some of them shorter-lived? I sometimes wonder how the actual length of time of growth during their life span as natives compares with the growing time in our gardens, located in different climates. Maybe it is not reasonable to look at the matter this way. Perhaps a plant may have a certain number of growth cycles in its natural habitat while in our garden it may have a lesser number.

As for soil and drainage; with little top soil and very poor drainage we found that raised beds were the answer for us. Everything had to be brought in and this is a gradual process that still goes on. A lot of sand was worked into the clay, along with humus, peat moss and old dry manure. For the rock garden we used a basic mixture of sand, loam and peat moss. Leafmold and coarse grit were added for sharper drainage. The raised beds and slopes we built were gradually edged by big rocks, and in some cases a single or double wall was made, as in the case of the heather garden where a lot of peat moss, sand, leafmold and fir bark was used.

The rock garden gets a gravelly mulch with some bonemeal mixed in several times a year. Right after the heavy bloom period in the spring, I like to put both bloodmeal and bonemeal in the mulch and this helps the plants through the warm season and they lose that tired brown look they often assume at that time. The heather garden is mulched, too, but here I use a peaty fir bark mixture that has a fertilizer in it for acid soil plants.

Many people here, when putting in a flower garden, will order a load of "top soil". The material sold here under that name usually is a very fine-textured sandy loam. It was used here for a raised bed along our east fence and also for an extension of the rock garden. Many of the easier plants seem to thrive in this. *Globularia cordifolia* and *Alyssum alpestre* spread out in nice mats. Moss phlox (*P. subulata*) was a mass of color there this spring and a one inch undetermined *Erigeron* species luxuriated. In January, while writing this, there is a spray of this in flower, its five lavender flowering stems about 10 inches high at this low altitude. Our winter sunshine must have fooled it. Last year we did not get our bank secured in time and the continuous rain of a few successive

storms caused mud flows to spread below. With coarse sand and humus mixed in and a better established planting this slope is staying in place this year.

This fall I found a "fill sand" with a very gravelly texture at one of the sand and gravel suppliers. It seemed to be just the thing for a scree slope and so we went to work and rebuilt part of the old rock garden into a double curved wall of black lava rock. One side is higher than the other to provide the slope, and the fill sand was used in between. At a medium level a richer soil mixture was used and the top layer was almost pure gravel. Water sinks right into this slope and although the top layer dries out fast, moisture seems to be retained beneath. Many plants were transplanted to this higher level and they seemed to take hold immediately. I expect better results from the tiny dwarf bearded iris in this new location. They were never quite happy before, although the somewhat taller Lilliputs always put on a show. One of the good performers here is *Iris* 'Tinkerbelle', bright medium blue with a dark blue blotch on the falls. Tiny 'Sparkling Eyes', a lovely two-tone, did bloom the first year I had it, but not since. We'll see if it is happier now.

Then about exposure and landscaping; exposure means the position as to the points of the compass in connection with the position of the sun. One of the first things we had to attend to when we moved here was that we had to decide on the location of our trees and shrubs. Our house fronts to the north, accordingly the coolest side. The south-facing backyard is completely enclosed by a high fence. This is where most of our gardening activities take place, even if it is not the most favorable aspect in this region. Most of our shade is needed on the southwest side and this is where the densest concentration of our trees and shrubs is, although we have them scattered all along the outer edge. Many of these trees and shrubs are deciduous so that the shade is there when we need it during the warm season. These things do not grow up overnight. We have learned to utilize all the available shade.

The northeast side of the big Pfitzer juniper accommodates *Campanula pusilla*. *Campanula muralis* is more to the east on a higher level. These bloom at different times so prolong the show of color. On a gritty bank, still with juniper protection from the sun, a clump of *Androsace sarmentosa* bloomed so profusely this spring that I was afraid it would wear itself out. To the east some dwarf gray-leaved hebes grow on top of a double wall. The north side of this bank slopes down and there in some cracks *Pimelea coarctica* is creeping down and a dwarf Edelweiss flowers through the summer. Beside it small encrusted *Saxifraga cochlearis* seems to be happy, and still another color is provided by *Veronica armena* with its vivid gentian blue. *V. saturoides* always shows up well, coming from between a rock and a low juniper. Its flowers are not nearly as bright as *V. armena*, but still the effect is pleasing.

I had set up a small east-facing slope for my *Kabschia saxifrage* and put there one rooted rosette to try it. It seems to be a good spot, for it had become a nice little clump, but the slope will have to be worked over as *Mentha requienii* has taken possession of it, jumping down, so to speak, from a pot above this coveted place. Another *Veronica armena* grows there but the minty carpet does not seem to bother it as the veronica crawls merrily around on top. *Saxifraga cotyledon*, one of the bigger encrusted saxifrages, will grow on a flat space and is not too particular as to the soil. With some morning sun, it keeps making an endless number of offsets, but put it in a north- or east-facing wall and how much better it looks.

Last year I had masses of mossy saxifrages blooming under the split-leaf Persian lilac. These were some of our first seedlings from the time before I learned not to sow all the seed I had. There must have been thousands and it



Mrs. D. S. Croxton

Androsace sarmentosa

really hurt to throw the thinnings out. I needed many before I found out just where they were happy. These plants within the year need replanting though, as after a while parts will turn brown. The green tips will easily make new clumps for next year's bloom.

This corner of the garden provides lovely spring color. There is a blending of pink, red and white, the lavender of the lilac above and sprinklings of the pink daffodil with the violet fragrance, dainty 'Louise de Coligny'. A bush cherry and pink stock bloom at the same time in an adjacent spot. By the way, I might point out that this whole section is raised and banked and this is why the colors show up so well. The bush cherry is being trained to grow up and not too much sideways from now on. This will enable me to plant some things underneath that cannot stand full sun. It will serve as an overplanting for the pink daffodils that bloom there in the spring.

Some of the showiest performers for edgings that can stand our sun are the armerias. I remember them from long ago. There are some small city gardens outside of Amsterdam in The Netherlands, where I used to live. Many people living in apartments in the city would spend their spare time in these little plots, growing things of beauty, and "English Grass" was popular with them. In Switzerland they call armeria Japanese or Spanish grass, and this, if anything, indicates the origin of the species. (Is there really one in Japan?) These are all *Armeria maritima*, *A. caespitosa*, or *A. setacea* with many garden hybrids.

There are a number of lovely armerias, but one of the nicest, to my mind, is *A. caespitosa (juniperifolia)*. It has the neatest rounded hummocks that completely cover themselves in spring with pink or white flowers. When they have finished blooming, I cut off the flower stems and spread them around the plants on top of the gritty soil they grow in. Each summer there are lots of seedlings. One has to watch carefully when weeding out little annual grass seedlings.

When the seedling looks like a little star of radiating leaves, leave it alone, it's an armeria!

In between my clumps of armeria are plants of *Dianthus* 'Tiny Rubies' blooming at the same time in a slightly darker pink. Also with them the regular sea thrift, *Armeria maritima*. The white form of this is particularly nice in between the pinks. In the same area are earlier blooming single jonquils and campernelles, both of which are multiplying well. Autumn crocus were not too successful here because the storms at that time never let them last long.

To be Continued

AMERICANS ABROAD

MAJ. GEN. D. M. MURRAY-LYON, *Pitlochry, Scotland*

The Editor seems to think that it might interest members to hear how some of your native plants do here in Scotland. Conditions here are, I gather, similar to those in Western Washington, though we get more frost and snow, I mean in your gardens, of course, not on the mountains. First I will mention some ericaceous shrubs which I grow successfully in peaty, leafmouldy borders.

Cassiope hypnoides, which is, I believe, more or less circumpolar, is a most attractive little mossy plant about an inch high, with small white bells on fine wiry stems. It is rare in gardens over here and difficult to come by. I got two tiny rooted bits in 1960 and now they form a little patch about one by two inches. They are growing on a shelf in a peat bank facing northwest, where they get no direct sunlight, except for a blink possibly just as the sun is setting in summer. The soil is peaty with a dash of leafmould and coarse grit and is never allowed to dry out.

Leucothoe davisiae I raised from seed which I got from Washington in 1954. It has done well in a peaty border in full sun, except for two or three hours around midday, when it is lightly shaded by some birches some way off. It has increased and spread by stolons, and produced a good supply of its creamy-white flowers, which rather resemble Lily of the Valley (*Convallaria majalis*).

Phyllodoce breweri is growing close to the above and doing quite well, though it is not such a hearty grower as *P. empetriformis*. It is a branching shrub of some twelve inches in height and spread, with attractive saucer-shaped wine-coloured flowers.

Romanzoffia unalaskensis, raised from Vancouver seed, is easy and happy in humusy soil in a wall in part shade. It looks rather like a saxifrage with its scalloped kidney-shaped leaves. The silky flowers are gleaming white with a bunch of yellow stamens in the center; a most attractive little thing.

Saxifraga bronchialis, grown from seed sent from Nevada by Mrs. Margaret Williams, is a 'mossy', and easy as most of that clan are. It has not flowered yet, but is doing quite well amongst dwarf rhododendrons. Its bronzy foliage is attractive in winter time.

Now we will leave the peat beds and have a look at some scree plants.

Campanula piperi, raised from seed sown Jan. 29, 1962, germinated May 1, 1962, and never looked back, somewhat to my surprise as I understood it was difficult. It is doing well, both in the open and in pots in a coldframe. Out of doors it is growing in full sun in a sharp scree largely composed of boiler ash (cinders), spreading by suckers and flowering freely. The wide open flowers are carried on short stems, one to a stem, and are an attractive lilac-blue, with prominent bronzy-red stamens. The leaves are shell-shaped and neatly toothed.

Sisyrinchium californicum (? syn. *convolutum*) has pale green, widish

sword-shaped leaves and good-sized clear yellow flowers on nine-inch stems. It does well and self-seeds in any reasonably decent well-drained soil. It is a useful plant for the alpine meadow, is showy, and has a long flowering period—June to October.

I will end with two definite failures, and I hope someone who grows them more successfully than I do will tell us how it is done. The two miffs are *Eritrichium argenteum* and *E. elongatum*. I raised them both from Dr. Worth's seed, and gave them the same treatment as succeeds with *Eritrichium nanum*. The compost was 'John Innes seed compost' which might be described as a normal alpine mixture (if there is such a thing), to which was added an equal part of crushed crock, half a part of coarse sand, half a part of vermiculite, and a pinch of hoof and horn meal. Half an inch of granite chips on top was added. They germinated after a good freezing; two *E. argenteum* and four *E. elongatum* in two and three months respectively. They grew on well and started the winter as rosettes up to $\frac{3}{4}$ of an inch in diameter in thumb pots.

In September the pots, which were sunk in a sand plunge, were covered with open-ended cloches about half an inch above the sand level, to allow a through draught of air. The two plants of *E. argenteum* and all but one of *E. elongatum* were dead by late spring, say April, when the cloches were due for removal. The one plant of *E. elongatum* grew into a good plant, 1 $\frac{1}{2}$ inches across, flowered and died; so that was that, and no seed. *Eritrichium nanum*, treated in the same way, grew on, flowered, self-seeded, and continued to grow.

In addition to those I have mentioned, I grow quite a number of other Americans successfully, mostly peat border plants. From the above you will have gathered that some Americans behave very well over here and are no trouble at all, but others—!

BRINGING UP THE "BABIES"

RICHARD LANGFELDER, *Chappaqua, N. Y.*

It is interesting to note that many books, booklets and articles have been written dealing exclusively with propagation. They go into every possible detail; how to raise from seeds, cuttings, and by layering, etc., but what to do after germinating is very seldom mentioned. Yes, if you raise vegetables, annuals, and border perennials, there is always the same advice. It is that after the second pair of leaves appears, you should, or can, transplant the seedlings in a mixture of one part loam, one part peat or leafmold, and one part of sharp sand. But right there the advice ends.

This article deals exclusively with alpiners and rock garden plants and how successfully to transplant them. It is directed to those who are just beginners, or those who have had some trouble bringing the seedlings that they have raised to maturity. Personally, I think that the raising of seedlings is much easier than bringing those seedlings to maturity. After raising alpiners, etc., for so many years, not only to the seedling stage, but ready to set out, I have found that for future successful transplanting three things done at the time of seed sowing are most important, namely: Sow thinly. Use a good proportion of sand and grit in the seed mixture. Do not bury the seeds.

Old, experienced hands have learned their lessons. By talking to fellow gardeners, I hear mostly success stories, and very seldom do I hear about failures, but failures can teach more.

Three factors, which in the end will be decisive for the successful raising of alpiners and rock garden plants, must be considered: The best time to trans-

plant. Into what to transplant. The soil mix best suited for the alpiners in question.

The best time to transplant is a wide open question. I would group alpiners into: 1—Alpine meadow plants, 2—Those which grow in rocks and screes, 3—Those which like shade and woodland conditions. Alpine meadow plants can be transplanted rather soon, after four leaves have appeared (cotyledon or seed leaves are not leaves). Included are plants of the genera *Alyssum*, *Aethionema*, *Achillea*, *Arabis*, *Wulfenia*, some of the aquilegias and some of the campanulas, and many more. Some primulas and woodlanders belong here too.

If you have sown your seeds correctly, (and I mean very thinly), you do not have to rush to transplant and that is all to the good, because they will have time to build up a good root system. It would take too long to tell of all the plants whose seedlings would do much better if they were allowed to stay longer in their pots, flats or coldframes. I never transplant *Ramonda*, *Haberlea* or *Jankea heldreichii* right away, for it takes from six to eight months. When I do transplant them, I have very good luck. It is the same with *Kabschia saxifrages* and Aretian androsaces, some western windflowers, European gentians and many more.

Old, experienced hands can transplant much earlier, but not much is gained. There are a lot of gardeners who get so excited when they see a tiny speck of green appear that they feel that they must transplant immediately, and the result is, to put it mildly, disappointing.

I always transplant into pots or flats, which I put in the coldframe. The distance from ground to glass should be at least 10 to 12 inches. I have a small greenhouse, but it is too warm for alpiners, and only those that like it warm can be started there. I sink my pots and flats up to the rim in a mixture of $\frac{3}{4}$ peat and $\frac{1}{4}$ sand. This keeps the moisture in better and longer; the sand is for quick drainage and keeps the peat in a condition to get moist again. Dry peat can shed the water like a rubber mat.

There in the coldframe I harden off the transplants. The coldframe is closed for the first week or so, and when the sun shines a shader is placed on the sash. If the weather is mild, the sash should be propped up a little to let in fresh air. As a shader, I use only Saran cloth, a product of Chicopee Mfg. Co., Cornelia, Ga. One 3x6 sheet costs about \$1.20, but those who want to buy it should get together with other interested ones because this firm charges \$5.00 extra for orders under \$50.00. It is a superior product, and any size is available.

I have given up the shader I had made from plaster laths. For the first week, I use a shader with 65% shading and later one with 50%. I put them on only in sunny weather. For watering you do not have to remove the shader as you can water right through it.

Every rock gardener should have a coldframe. They are so easy to make and quite inexpensive. The usual size is 3x6 feet, but you can make any size you prefer. Other good sizes are 2x3 and 3x4. Just get some 2x8 or 2x10 lumber, even a rough one-inch in thickness is good. Redwood, cypress and cedar are excellent. Other lumber should be painted, but not with creosote; cuprinol is very good. After painting, the frames will last 4 to 6 years; without painting they may rot within two years. Redwood, etc. will last a lifetime.

Use 1x2 inch lumber, cut to the proper lengths, and just nail the pieces together to make a sash. If you want a more sturdy one buy the next size lumber available. At your hardware store you can get celotex screen plastic, which comes in rolls three feet wide. It costs about 51c per running foot. Staple it on to the sash frame and you have a good sash.

I seldom transplant directly into the coldframe or the rock garden or in

the nursery row. If I do, it is mostly alpine meadow plants. Wotke, that old master of rock gardening, advised, in 1899, twelve different mixes for transplanting alpine. We do not need that many. Here again I have to refer to Hills' book on propagation. For most plants the so-called Normal or N mixture is sufficient, which means two parts of loam or garden soil to one part of sand and one part of peat or leafmold. I like to add one half part of chips. For rhododendrons, ericas, heather, some woodlanders, and ericaceous plants in general, I use a peaty mix. This means two parts of peat, one part loam, and one part sand. Some chips would do no harm. Just half peat and half sand is also very good. For the rock dwellers I add one or two parts of granite chips. For lime lovers, I add bonemeal and limestone chips instead of granite.

Androsaces, *Kabschia saxifragas* and scree dwellers should have 60% sand and grit, the rest mostly leafmold and a little loam. European gentians love open loam with peat or leafmold added and some sand. For the rock garden the mix N is just right, but some chips should be added. If you can get powdered slate or slate chips, substitute them for granite. It can be bought from firms that build tennis courts.

Seeds can also be raised in pots in plastic bags. This is good for ericaceous plants which like moisture, shade and peat. Usually they need a long time for germination and the plastic bags act as little greenhouses. The danger of seedlings becoming drawn out is not so great as it is with those that like sun, such as heathers, ericas, etc. These should be looked at almost every day, as one day in shade can ruin the suddenly emerging seedlings. As soon as you see the first seedling emerge, the pot should be placed in strong light or even in weak sun. The bags can be used in two ways, either you place the pot in the bag, or you place the bag over the pot. As already mentioned, the bag method is good for cuttings, for tropical plants, and for some ericaceous plants which need a long time for germinating. Watering can be deferred for a long time. If you want to use plastic bags for alpine, it is better to put the bags over the pots, and fasten them around the pots with rubber bands. In this case special attention must be given, as the pots will dry out much sooner. If you see too much moisture inside the bag, take the bag off and turn it inside out and replace it.

After the seedlings are larger they can be hardened off by rolling the bag down a little every day, where the pots are in the bag, or where the bag is over the pot, punch a few holes in the bag, and eventually remove it. A short time ago they brought out new plastic bags, called Baggies, which are better to use as they are clear and you can see inside the bag, whereas the freezer bags that were used earlier were not so clear and it was hard to see what was going on inside. If you use a terrarium or propagation box, the cover should be taken off gradually.

Now for a few practical hints about what has helped me. When first watering the transplanted seedlings, I put a little permanganate in the tank, coloring the water a light pink. Then I set the pots or flats in the tank and let the water soak up. As soon as the water comes to the surface, I remove the pots or flats. In coldframes, where watering must be done from above, I use a fine rose, swinging the watering can back and forth; in this way the seedlings cannot be washed out. Watering is good only if it is done correctly. Everything should be moistened well. Both outside and in the coldframe the water should penetrate the soil to at least ten inches, and watering should not be done again until the surface becomes dry.

All transplants should be shaded until one can see that they are growing well, and have firm, healthy leaves. Then the shader should be removed at first for a short time, and later, entirely. After transplanting in the rock garden, you should

shade the seedlings on a sunny day with newspapers or a bushel basket. I have never lost a plant because of sun or dry wind.

When taking transplants out of a flat, it is well to cut between the rows with a knife. Cut through the short way, too. This should be done one or two weeks before transplanting. This gives the seedlings a chance to grow roots in an inward direction. It is the same procedure a nursery man uses when transplanting trees. He cuts out a circle around the tree with a long nursery spade, usually in fall, if the tree is to be transplanted in the spring. The transplanted tree will then grow without stopping. When transplanting, it is a good idea to moisten the pot and also the soil you intend to use for transplanting. Dry soil can kill the fine roots in a very short time, especially when the sun shines on the plant.

For transplanting into pots and flats, I use a small dibble, which I make out of a dowel. Dowels can be bought in any hardware store. I use $\frac{1}{8}$, $\frac{1}{4}$ and $\frac{1}{2}$ inch dowels, according to the size of the seedlings to be transplanted. I cut off a ten inch piece of dowel, point it on one end and flatten it on the other. I make a hole in the soil with the dibble and sink the seedling in it. Then I press sideways to the roots. In this way the roots cannot be broken. I have seen potting done where the potter pressed right down and undoubtedly the delicate roots were broken. Most plants will recover, but the vigor is gone for the time being. Most plants want to be potted hard.

After potting, it is well to put chips around the plant, either granite, which you can buy in any feed store carrying poultry feed, or limestone. There are three sizes of granite that you can buy and the smallest is just right for most alpine.

Concerning flats, there are now flats on the market made out of galvanized sheet metal. They cost about 80 cents to \$1.00 for the large size, freight included. They will last 25 years, and are easy to clean and to handle. They can be bought from W. F. Norman, Nevada, Missouri. Good luck with your transplanting!

TRILLIUM MADNESS

JOHN C. LAMBERT, *Wixom, Michigan*

Wildflowers have always been my hobby. However, it was not until 1958 that the lure of the genus *Trillium* really descended upon me; slowly at first, then with an ever-increasing tempo, as plants of new varieties, and information regarding the different species and varieties came forth. This search for information requires much detective work, and it is not easy to come by. The earlier discourses of some writers and botanists seemingly were based on a not too thorough field work, or else some poor specimens from the herbariums were used. Also, possibly due to the many local variations within the species, many were, and still are, frequently misidentified.

The desire by gardeners for trilliums seems to have reached a climax during the 1940's. With the passing on or aging of the prominent gardening writers of that decade, and the demise of several outstanding nurseries, where most of the unusual species were stocked, there apparently have been neither new writers to stimulate the desire for these wonderful plants, nor any nurseries to service the gardener's needs for other than the most common trilliums.

The genus *Trillium*, in my opinion, is the most beautiful, adaptable and variable of all our wildflower genera. I have species and varieties from all sections of the United States growing in my garden. The trilliums from the West Coast are congenial with the local species, as well as are the ones from the southeastern states. Our temperatures average 5 to 8 degrees lower than Detroit's, 35 miles southeast from us. Being on the north side of an east-west valley, we get some

terrific winter winds. However, it matters not that these trilliums came from the north, south, east or west, they are all thriving and bring a lovely succession of bloom through the entire spring season.

To help combat our low temperatures, I mulch the whole wildflower area with maple leaves to a depth of several inches. This is not only good winter protection, it also adds much humus as it rots, and keeps the soil moist and cool during the summer.

In planting, I use the same technique for all varieties with the exception of *Trillium nivale* and *T. undulatum*. The rhizomes, usually six to a pocket, are planted in pockets dug in the native soil, which is sand, and lined with rotted stump wood. The depth of the rhizome is generally set at having the top approximately two inches below ground level. A mixture of peat humus (alkaline), sand, and rotted wood is used to complete the planting. Most of the plantings are made in the fall. I have planted them in full bloom with hardly ever a loss. The loss, if any, is caused mainly by birds, mice, moles, and squirrels.

For *Trillium nivale* the above planting plan is acceptable, except that I use liberal amounts of marl, in with the soil mixture, which this species seems to appreciate. The rhizome of this dwarf is set one inch below ground level. For *T. undulatum*, I select the moistest situation in the garden area, excavate to a depth of two feet by two feet wide; fill the hole with alternate layers of small stones and *acid* peat humus until two inches from the top of the hole. This allows for a continuous supply of moisture. I set the rhizomes on the top layer and cover them with a soil mixture composed of *acid* peat, rotted wood, and sand. Then I mulch with well-rotted hardwood sawdust one inch over all.

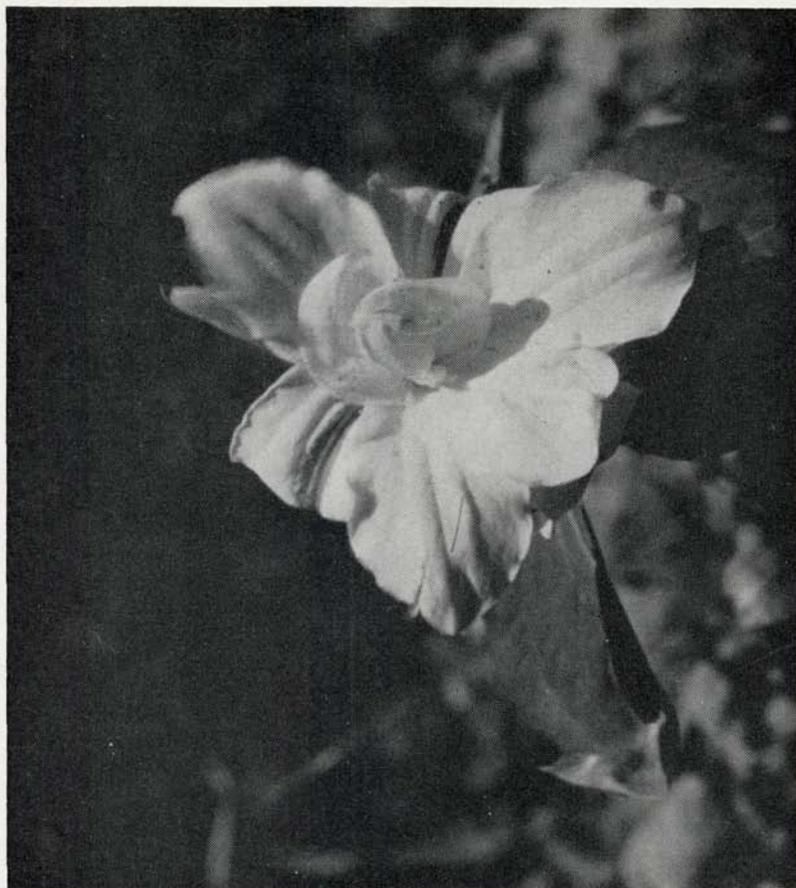
Water is a must in all plantings even when the soil is moist, I still use water in abundance. Mulching with leaves in accordance with the shade requirements of the individual species is about all the special treatment that is necessary. I have my trilliums planted among pines, tamarack (larch), maples, wild cherry, and apple trees. Most species will thrive in almost full sun, provided they have an abundance of humus and a supply of moisture along with good drainage.

One contributor wrote in an earlier issue of the Bulletin that, "Trilliums bring the Spring." I say, "Trilliums are the Spring!"—from the tiny *T. nivale*, which blooms when the snow is on the ground, to *T. stylosum*, which is one of the last to bloom during the latter days of June and on into July. Any one of the trilliums will repay you a hundredfold with its beauty for the care you may give it.

According to Mrs. Mary G. Henry, of Gladwyne, Pa., there are 50 odd species and varieties of the genus *Trillium*, with some variations of these. I can only account for some 20 of this number. When writing to gardeners in the localities where the needed species and varieties have their habitat, only about one of twenty are even vaguely acquainted with the trilliums. The professional botanists, who really know the genus, shy away from me as if I had the plague, when I request their help in obtaining some needed specimens.

When the madness permeates your being, you investigate any and all information of a possible lead as to the source of a new species or variety. You will peruse the horticultural journals, writings, and articles of past and present authors. In fact, at either the written or spoken word of "*Trillium*," you pick up the scent for the possibility of it being a new lead.

Another aspect of the madness is that you acquire a disease similar to that exhibited by the old-time gold prospector; there's always another valley and there's always another tomorrow. You will have the same feeling when you obtain a "new one" as if you had really hit pay dirt. When this occurs, you have acquired the madness.



Ruth Lambert

A Michigan Mutant *Trillium*

INTERCHANGE OVERFLOW *PYXIDANTHERA BREVIFOLIA*

(Editor's Note)—At the request of Mr. Henry Fuller of Connecticut, information concerning *Pyxidantha brevifolia* was asked for in Interchange (*Bulletin* of January, 1964). Prior to that date the editor wrote to two members who lived fairly close to the plant's only known habitat, asking them to investigate and report. Both complied promptly, and excerpts from their letters follow. It is this kind of quick reaction to requests for horticultural information that makes it possible for the *Bulletin* to serve its readers, and in so doing, in this case perhaps, be the means of preserving this little-known and rare plant, and further, of introducing it into rock gardens, should it prove worthy.

From Mr. Leonard J. Uttal's letter of November 15, 1963. He writes from Madison Heights, Va. "I personally have not yet met this plant, *Pyxidantha brevifolia*, but I surely will look for it next spring. The literature tells me that

it is a rather depauperate form of the more familiar Pyxie-moss. (*P. barbulate*), somewhat more hoary, also. Perhaps only academic curiosity would justify attempting it in place of the common Pyxie-moss. I suspect it is as difficult to grow as it is to obtain; also, so rare that perhaps it should be left alone. This is a spot judgment based on little knowledge—I shall try to learn more, and if I do I'll pass it on."

From his second letter dated December 7, 1963—"More on the rare Carolina endemic *Pyxidantha brevifolia* for Mr. Fuller: I quote from a letter from Harry E. Ahles, Curator of the Herbarium, University of North Carolina. The letter was dated December 6, 1963. 'Concerning — *Pyxidantha brevifolia*, let me assure you that it is usually fairly abundant where found, often forming dense carpets. It still survives, but is definitely not long for this world. Civilization is rapidly encroaching upon its habitat, and often when you go to visit one of its localities, there, instead, you will find a home.

"Unfortunately, I see no way of protecting it unless people in the area will set up a few of the habitats in which it is present, and just leave it alone. Another method might be to take small clumps from areas that are obviously to be destroyed and carry them to other similar mesic sandhills and hope that it will there become established.'

"In other words," Mr. Uttal continues, "a situation exists where the species is in danger of extinction from encroachment of environment. A seriously interested person has justification to remove plants from definitely threatened sites for experimentation, provided he can supply the right environmental situation, which should be the same as for *P. barbulate*. I feel such an experimenter should consider it his duty to attempt to transplant some of the plants into related sites, relatively protected in the wild. May I state that transplanting from the native fine white sands of the region is risky, at best, and it is most successfully done after protracted rains, when the sand compacts and the entire root can be deep-spaded out without risk.

"I have examined herbarium sheets of this species and find it a tightly compressed and compacted version of the commoner Pyxie-moss. *Truly it should be a charming plant*. Since I live but a few hours from its habitat, I hope to visit it in the spring, and thus perhaps, be able to describe it more authoritatively. In the meantime, I hope this information will serve."

On January 6, 1964 Mr. Uttal reports increasing interest in *Pyxidantha brevifolia*. He writes, "I have located the actual site where this plant grows—very small indeed! It is about 225 miles from here, an easy jaunt, and I plan to visit there in the spring and take some pictures. This plant blooms very early, mid-March, at latest. Presumably I will be able then to write something about this very rare plant."

Mr. Edgar L. Totten, our secretary, sent this excerpt from a book published in 1932, by the University of North Carolina Press, from whom permission has been kindly granted for its use in the *Bulletin*. The book, *The Natural Gardens of North Carolina*, was written by B. W. Wells. The only change from the text is the omission of the exact habitat of *Pyxidantha brevifolia*, as it is not the policy of the *Bulletin* to pinpoint the locale of rare plants. The excerpt:

"Of special interest is a recently discovered species of pyxie or 'flowering moss' (*Pyxidantha brevifolia*, fig. 83) which is only known from a restricted area some six miles square in the sandhill district near ——. It had escaped detection until the author had the good fortune to find it in 1928.

"It was named '*brevifolia*' because of the very minute size of the smaller leaves, these being commonly less than 1/16 of an inch long. Closely overlapping on the slender, creeping stems, they give the plant a distinct moss aspect which is

much emphasized by the close and compact branching system, resulting in the formation of the mats. In the region of greatest abundance, — these mats are frequently three to five feet in width. They are so common here within a short distance from the road that even the most casual observation will pick them up.

"This new species differs from its only other relative, *P. barbulate*, in a number of ways: The leaf is 1/16 - 3/16 inches long, the flowers are smaller, and the plant assumes an aspect of a compact mat. The soil habitat is of deep, dry, coarse sand. Its distribution is highly restricted —. The flowers bloom in midwinter (February).

"Why and how such a species came to be so isolated would be difficult to explain. The seeds have been collected, but they were found impossible to germinate. Such a plant, apparently no longer reproducing by seed, has, under fire and the competition of other plants, been reduced to a last stand in the region already mentioned. Fortunately it is rather abundant in its locality so that there is no danger of immediate extinction.

"When the mats flower in February and March, they change from dull green to white and pink—pink because the buds are of that color. Later in fruit the innumerable branch tips are reddened by the color of the capsule.

"These color aspects much enhance the interest in this rare species, especially when considered from the point of view of rock gardens. It has already been tried in one such garden where it is highly prized as one of the gems of the collection. However, sufficient experience has not been had with it to know whether or not permanent transplants can be made. Rare plants such as this one often give much difficulty to the grower. If it can be successfully handled, there is no doubt that this beautiful little mat form should become a favorite with all rock gardeners."

COLLECTOR'S NOTEBOOK

ROY DAVIDSON, *Seattle, Washington*

Kalmiopsis leachiana 'Barbara Cook'

Kalmiopsis leachiana 'Ted Greig'

Juniperus horizontalis 'Pondera Copper'

After a plantsman has spent just about so much time examining the handiworks of Nature, one of two things is likely to happen; some, having seen everything, quit, while others gain an insight (or a refinement of sight), which is by way of saying that they attain a higher plateau. Once reached, this level of perspective allows the vantage of keen perception, an almost uncanny, often instantaneous, evaluation of that ephemeral something which can make a plant a shade better than most of its sort, or conversely, merely a freak.

I may hope in time to be counted among the numbers of this patient group. Meanwhile, my travels of this year yielded several good things, among them the three set forth above, which are suited to the rock garden.

My purpose in going to the "new" Umpqua colonies (there are now at least three known) of the Le Pinic form of *Kalmiopsis*, was primarily to see if any notable variation was to be found, especially in corolla color. This variation seems to be lacking, as far as I was able to gather, in the Chetco, or "original" form as found by Mrs. Leach, and charming though this little gem of a shrublet is indeed, I could envision more pleasing coloring, for I am not personally fond of the harsh "Siwash Pinks", as a dear departed friend once referred to that family of pink-purple colors.

Of the several pastel clones discovered this year, 'Barbara Cook' was singled out for its larger flowers and for the distinctive color ring that sets off the heart

of the flower. Described as Amaranth Rose (HCC 530/1½, or between 1 and 2), this inch-wide blossom is enhanced by a delicate but definite halo of Rhodamine Pink (HCC 527, full intensity) at the base of the long, pale filaments, and these bear rich purple pollen vessels.

Though far from true red, 'Ted Greig' is so much brighter than other *Kalmiopsis* as to seem red by comparison, an exceptionally glowing, clean color, the flowers borne heavily on the dwarf plant, which in the wild was not over six inches. Whereas a foot is the usual height, and some plants, at least in cultivation, have attained half again as much, these things might be quite relative and are not here stated as limitations for any given clone. Thus the one foot stature of 'Barbara Cook' may be due in part to the shaded place in which it grew, while the dwarfness of 'Ted Greig' might result from its position in full light. By the book, this latter is Persian Rose (HC628/1) with the depressed cup of the receptacle a tiny, pale green dot, fringed about with the ten filaments, again bearing purple pollen sacs. I am pleased to dedicate these plants to two persons who shared this expedition and to acknowledge the generosity of the guidance of Bill Magnus to this newest colony of *Kalmiopsis*.

The plains and foot hills of the eastern slopes of Montana's northern Rocky Mountains, at least in two counties, Glacier and Pondera (accent last syllable, long, hard A), are clothed patchily, in many places densely, with broad, prostrate junipers amidst the buffalo grasses. I found a sixty foot one, two inches high! Considered a range weed by ranchers, this is notable hereabouts in that no two seem to have the same qualities of color and texture that might enable them to appear alike.

Of the many "bronze" clones examined, 'Pondera Copper' is singular in being a bright, new penny copper color, not the dull burnished or purplish bronze usual to junipers. Further it is a color that seems to be constant the year round, in varying degrees, not a drought, or cold-induced pigmentation phase. As such, it should be an invaluable new addition to an already long list of Juniper clones, all in bluish, purplish or green colors.

WELCOME! NEW MEMBERS

- Mrs. Maxine Armstrong, 8021 Lake St., Omaha, Nebraska 68134
 Mrs. William J. Berg, Pleasant Dale, Nebraska.
 Mrs. Robert Berry, 617 Fairway Drive, Aberdeen, Washington 98520
 Mrs. C. E. Boyd, 3209 South 28th Avenue, Omaha, Nebraska 68105
 Mr. and Mrs. Albert Brauss, 7517 196th N. E., Redmond, Washington.
 Mrs. Anton Bruehl, 20 Shady Acres Road, Darien, Connecticut 06820
 Mrs. Pat J. Crowe Sr., 3731 Kings Road, Route 2, Chattanooga 6, Tenn.
 Mrs. Amelia Doll, 6016 Binney, Omaha, Nebraska 68104
 Mr. Philip R. Dumont, 24 Franklin St., Augusta, Maine.
 Mrs. Catherine Eskeli, 1141 18th Ave., Redwood City, California.
 Mrs. Alfred P. Fehl, RD 2, Smithsburg, Maryland 21783
 Mrs. Lester Fryman, 7119 Rio Vista Court, Dayton, Ohio 45424
 Mrs. John P. Geissler, 5618 Florence Blvd., Omaha, Nebraska 68110
 Mr. Philip Glaser, 624 Wanamaker Road, Jenkintown, Pa. 19046
 Mrs. George Glasser, Spencer Place, Ossining, New York.
 Mrs. M. J. Gordon, Blyth, Nightcaps R. D., Southland, New Zealand.
 Mrs. Peter H. Gourley, Rt. 2, Prosser, Washington.
 Mrs. John A. Graff, 1907 So. 113th Street, Omaha 44, Nebraska.
 Mrs. Paul Graham, 211 Strathmore Place, Corning, New York 14830
 Mrs. Connie Green, 10682 S.W. Lancaster Road, Portland, Oregon 97219
 Miss Caroline A. Hansen, 5563 Mayberry Avenue, Omaha, Nebraska 68106

- Mr. Lester Hawkins, 16250 Coleman Valley Road, Occidental, California.
 Alice Horsfall, 5030 Emmet St., Omaha, Nebraska 68104
 Mrs. Reginald Jackson, Bridgewater, Connecticut 06752
 Mr. R. P. Jameson, 24 McCormacks Bay Rd., Mt. Pleasant, Christchurch,
 New Zealand.
 Mrs. Donald E. Kohler, 4046 East Eye St., Tacoma, Washington 98404
 Mr. and Mrs. Norman Landberg, 39 Turtle Cove Lane, Huntington, L. I.,
 N. Y.
 Mrs. C. L. Merrill, 562 Summer Avenue, Reading, Mass.
 Mr. C. E. Mills, 176 W. 6th Street, North Vancouver, B. C., Canada.
 Joyce McKinney, RD 1, Box 115, Jamul, California 92035
 Barbara O'Neil, Valley Road, Cos Cob, Connecticut.
 Mr. Francis T. Palermo, 1527 Hammersley Ave., Bronx 69, New York.
 Mrs. Clarence J. Petersen, 4017 Saratoga, Omaha, Nebraska 68111
 Mrs. Marion Potts, 8 Fawdon Lane, Newcastle upon Tyne 3, England.
 Mr. Earl R. Roberts, 5809 Rahke Road, Indianapolis, Indiana 46217
 Mrs. R. F. Schwagel, Box 35, Keedysville, Maryland 21756
 Mrs. H. J. Scribner, RD 1, Rock Hill, Missouri 64779
 Mrs. Frieda L. Sitkin, Furnace Dock Road, Peekskill, New York.
 Mrs. James Stenslie, Bar M Heart Ranch, Winifred, Montana.
 Mrs. Frank Thibdeau, RD 1, Georgetown, Connecticut.
 Ruth Tichy, 3226 Oak Avenue, Brookfield, Illinois 60513
 Mr. Bryan Vernimb, 635 Harristown Road, Glen Rock, New Jersey.
 Mrs. Evelyn B. Watters, 76 Longmeadow St., Longmeadow 6, Mass.
 Mrs. Wilmer Wright, Linden Lane, R. D. 2, Box 190, Mount Kisco, New York
 10549

INTERCHANGE

- A Long Want List—Mr. Boyd C. Kline, 522 Franquette, Medford, Oregon, wants plants. He writes, "I have a want list of some 300 plants that I would gladly purchase or exchange for. I read of the glory of a certain alpine, but nowhere is there an offer of seed or plant. I am looking for *Daphne petraea* (who isn't?), *Anchusa caespitosa* (true), *Calceolaria darwinii*, *Campanula zoysii*, *C. cenisia*, *Helichrysum frigidum*, *Melandryum elizabethae*, *Oxalis laciniata*, *Primula winteri*, *Rhodothamnus chamaecistus*, *Ranunculus glacialis*, —see what I mean?" Surely there will be those who can help Mr. Kline with seed, plants, or information as to possible sources!
- Ripe Seeds from Green Pods—Seed collectors should try this! Mrs. Shirley Backman, 1335 Hoge Rd., Reno, Nevada reports that she found in a 1962 *Bulletin* of the American Penstemon Society a method of ripening seeds though the pods were picked green. She has used this method on a *Penstemon* picked before the seed pod had opened and was successful in getting ripe seed. She placed the stems of the pods in a small bottle in which was a solution of four teaspoons of sugar in one quarter cup of water, and set the bottle on a window sill where it could get light but not direct sun. She did not change the solution, only added water as necessary to replace loss due to evaporation. Every few days she cut a small piece from the end of the stem. Mrs. Backman closes with, "Perhaps others would like to try this (or have done so) on other genera." Then she asks, "Is there a theoretical reason why this should work?" Which one of our members can and will enlighten us as to the scientific aspects of this interesting method of ripening seeds picked at the collector's convenience?

A New Book on Gentians—Soon—And by our own ARGS member, too. Sometime this spring or early summer, Doretta Klaber's new book, *Gentians For Your Garden* will become available. M. Barrows & Company, Inc., 425 Park Avenue South, New York 16, N. Y., is the publisher. As soon as a copy is received, the *Bulletin* will carry a review. Dr. Edgar T. Wherry had this to say, "It seems to me that the proposed publication of this book is a landmark in American rock gardening, —all other similar studies of the gentians being European." In writing of Mrs. Klaber, he said, "She is unbelievably successful in growing gentians, and what she writes will be based on real firsthand experience."

A Note of Regret—Mrs. Klaber's book, *Rock Garden Plants*, known and used by a great many of our members, and other gardeners, as well, is reported to have been sold out, and the publishers do not propose to reprint it.

The Sand Cherry—*Prunus pumila*, according to Mrs. Nevada E. Schmidt, of Sarona, Wisconsin, is suitable for rock gardens and is a native of her state. She writes, "It is a small shrub with willow-like habit of growth and requires little care if planted in full sun, as gravelly soil is sufficient. The natural abode of the sand cherry is in sand or rocky soil out where the sweet-fern grows in the bleaching sun. Its twigs are already wrapped in little muffs of flowers when the leaves unfurl. The fruit is globose 10 to 15 mm. long, nearly black when ripe. They bear heavily and are extra attractive when laden with shining cherries. Rabbits are very fond of the twigs. Spraying with deer repellent is effective."

Trilliums and More Trilliums—To complete his collection of trilliums, Mr. John C. Lambert, 1907 Charms Rd., Wixom, Michigan, needs rhizomes of the following species and color forms. He is willing to buy or trade rhizomes and will appreciate any information that you may be able to give him as to sources, etc. *Trillium hugeri* and its white form, *T. decumbens*, *T. discolor*, *T. lanceolatum*, *T. ludovicianum*, *T. maculatum*, *T. pusillum*, *T. simile*, *T. stamineum*, the white form of *T. stylosum*, *T. underwoodii*, and the double form of *T. erectum*. Mr. Lambert reports that none of the above are offered by any of the commercial companies now in existence.

Members Write—Mrs. Lucy W. Harriman, Landscape Architect, of Stamford, Conn., crowds a lot of professional advice into one small paragraph. "As regards our ARGS", she says, "I would say that we are all gardeners first, and then we specialize, so of course, we are all interested in growing things. And though the rock garden may be the main feature of the property, there is always the entrance planting, and the back door, and near the outdoor areas where plants not specifically rock garden plants should be used. We should consider our properties as a whole and arrange them to be pleasing, restful, useful; and put a little extra emphasis on the setting of the feature—the rock garden."

Mr. Ray Williams, Watsonville, California writes in a letter dated December 8, 1963, "This morning the first flower of *Narcissus viridiflorus* is opening, and though I know exactly where it is, still it is hard to locate. This is one of the greenest flowers I know, and what a wonderful fragrance! Also this morning there are over twenty plants of *Oxalis hirta* in full bloom. These are ordinary, I know, but their brilliance is always appreciated at this time of year."

Dwarf Conifers—Mr. Lewis D. Bill, 144 Parkway Drive, Stratford, Conn., needs many dwarf conifers for his collection. He writes, "Any members who may have any of the dwarf forms of the conifers (listed below) and would like to sell cions, or trade for any others that they may not have, may write

me at the above address. Many of these plants cannot be rooted, of course, and must be grafted; therefore the exchange will most likely take place next fall or winter." The list: *Abies alba*, *A. balsamea*, *A. concolor*, and *A. fraseri*; *Cedrus atlantica*, *C. deodara*, and *C. libanii*; *Picea abies*, *P. engelmannii*, *P. glauca*, *P. mariana*, *P. orientalis*, and *P. pungens*; *Pinus densiflora*, *P. resinosa*, *P. strobus*, and *P. sylvestris*; *Pseudotsuga douglasii* (*taxifolia*), and any dwarf forms of *Chamaecyparis* or *Thuja* with an ultimate height of not over five feet. He also wants pendulous and variegated forms.

SEED EXCHANGE NOTES

SOME UNUSUAL CONTRIBUTIONS—Certain seeds I am sending to the Seed Exchange this year are of plants so rare or otherwise noteworthy that some information about them may be welcomed by potential growers.

With one exception the twelve plants are native to central and southeastern United States. Of upland origin, they are expected to be reasonably hardy. It is suggested that they be attempted in climates where *Iris cristata*, *Stokesia laevis*, or *Chrysogonum virginianum* are now successfully grown; that is, in Zone 3 of the new USDA classification. The other is an Atlantic coastal plain plant and will be discussed under its heading.

Some of these plants are probably occasionally cultivated by direct transplant by local enthusiasts within their range; otherwise they are little known. They deserve better, for most are fine plants of little difficulty and superior, I believe, to many common offerings. Probably because they are so rare or otherwise circumscribed in nature, and because they originate from a region whose rock garden potential has hardly been touched, they have eluded cultivar lists. You venturesome souls who try these seeds can do service by sending me your comments, good or adverse. These notes are not meant to advertise a plethora of seeds for the supply is meager and will have to be dispensed accordingly.

Clematis albicoma var. *coactilis* and *Clematis viticaulis*—The border counties between Virginia and West Virginia have series of shale ridges known as the shale barrens. This is a region of high endemism, with several plants native there which would look good in any rock garden were they amenable. For most of these this remains to be learned. These two leather-flowers, however, have shown themselves quite ready to take to any garden situation away from their native barren shale. The first species is an upright clematis without color, but interesting for its creamy feltness all over, including the reflexed urn-shaped flowers. The beard of the achenes is white, making for attractive "Curly-heads". The second herbaceous clematis is an excellent rock garden plant. It makes a neat mound by flopping over, and it blooms abundantly spring through fall with many purple-sided leathery urns. The seed beards are tawny. This is one of the rarest species of plants, known from but a single county in Virginia. Widening its acquaintance in cultivation would be a service toward its continuance.

Allium cernuum mixture—The common rose-pink nodding wild onion of eastern America is well known. It is a meritorious member of the *Allium* tribe. Common on the Virginia shale barrens is a white form (formerly *A. oxyphilum*). Planting together in my garden has resulted in free hybridization with all shades of intermediacy, and, it seems to me, extended blooming time. The best of the hybrids is a white-flowered form with a dense umbel, each tepal of which has a rose-pink triangle on its midrib.

Gentiana clausa "Magnum"—Seeds are being offered of an apparent polyploid bottle gentian discovered in a swamp in western Virginia. *G. clausa* and *G. andrewsii* differ in minute technical characters, and in the trade probably *G. andrewsii* covers both. This new plant is exceptional. Larger in all respects

than the ordinary bottle gentian, the bottles are disposed in an ample narrow panicle instead of a close terminal cluster with a few in upper axils. The "bottles" are rich Wedgewood blue, with indigo shadings in the plaits between the petal lobes. Stems are lax and can be trailed in the garden, in which case the bottles stand erect. A vivid, spectacular plant, "Magnum" should be used as an accent for September blue. If others agree that this plant makes a desirable cultivar, it may carry the epithet "Magnum" in allusion to the large size of the "bottles".

Hydrophyllum virginianum var. *atranthum*—The ordinary Virginia waterleaf is rather bland and of interest only to growers of native plants. This variety, native to the higher mountains in the southern Appalachians, has deep violet-purple flowers with bristly anthers and is nice for a moist, shady, woodland planting.

Veronica angustifolia—This southeast coastal plane plant may be of limited hardiness but who can tell until he tries? Differing widely from the ordinary Ironweeds, too tall and weedy for garden use, this species bears its rose-purple heads scattered abundantly on bushy, wiry stems to two feet. I suggest a light, well-drained soil.

Ruellias—"Wild Petunias" have been offered by dealers in limited fashion for years but they have never begun to scratch the innumerable fine forms growing wild in nature. Our hardy ruellias are outbourn from a large tropical genus of the *Acanthaceae* family. We have recently learned that ruellias produce great diversity of form by self-pollination of colonies in isolation, and that the great many botanical names applied to this genus are probably excessive.

Classifying roughly, there are three main types of hardy *Ruellia* plants: depressed and spreading, semi-erect and bushy, and erect and slender. Flowers are of two types (in our plants), trumpet-shaped with a long throat, like a morning-glory flower, or goblet-shaped, with the petals often slightly reflexed, ruffled or fluted. Usually, the throat is marked with brown or purple lines and spots. Colors of the flowers are mostly blue, blue-lavender, blue-white, rarely white and rarely magenta. Most ruellias give up showy bloom in late summer and early fall to produce abundant cleistogamous flowers, as do violets. By selection, bloom may be enjoyed from late April to September. The plants seem trouble-free, except that cottontail rabbits like the succulent stems. Seeds are best sown in the spring and should be assured continuous moisture. I am offering what I believe to be the hardiest. For persons in mild climates there are many others.

Ruellia carolinensis mixture—A mixture of the most variable species, perhaps containing two species. Flowers clustered in upper axils, trumpet-shaped. The low, bushy forms are the best, having the largest flowers, to one and a half inches across

Ruellia humilis mixture—This is almost as variable, and the one most often offered by dealers. I have left out the common type and have included some real gems. Flowers trumpet-shaped, in many axils, not clustered. *R. humilis* is a particularly fine selection with very large, long-throated flowers of exquisite pale blue, unmarked. *R. humilis* var. *longiflora*—excellent for the rock garden, with the smallest leaves, very floriferous, flowers soft lavender. All the above are midsummer bloomers.

Ruellia purshiana—First recognized as recently as 1954 by Prof. Fernald, this species is remarkable for the very large goblet-shaped, pale blue or lavender flowers, with scalloped edges, borne on short peduncles from the lower axils in spring and early summer. Native to ravines and shady hillsides in the Appalachian Mountains. Requires shade for best bloom, and will go promptly to cleistogamous flowers if it gets dry or too much sun. Tends to a short life in

cultivation (2-3 seasons) but worth it for its exquisite flowers. Under good conditions it will seed itself (as will all ruellias).

Ruellia pedunculata—Native to the Ozarkian upland, radiating outward in the Mississippi drainage, this is quite a differently formed ruellia; a neat, wiry bushlet to two feet. The flowers are borne abundantly and airily on long wiry peduncles. While slightly smaller than in most ruellias, in this species the flowers make up for this by their abundance. They are goblet-shaped. This species seems to represent a transition in form from the vast number of tropical species in tropical America to the hardy species of the United States. It is really quite hardy.

LEONARD J. UTTAL, *Madison Heights, Va.*

CONTRIBUTIONS FROM FRANCE—*Acantholimon armenum*, *A. caryophyllaceum*, and *A. glumaceum*—After many failures with uncontrolled sowings of *Acantholimon* species, I made systematic germination trials, using any species I could procure, under controlled conditions in Petri-dishes in the laboratory. From seeds obtained from Botanic Gardens, seed merchants, and friends, I got practically no germination where the seeds were collected in countries outlying the lands where acantholimons occur naturally; more exactly, from a few thousand seeds, I got two or three seedlings and they proved unable to survive. On the other hand, with seeds received from countries where acantholimons are indigenous, results were quite variable; some sowings failed altogether, but many gave me healthy seedlings, though never in plenty; only from 5 to 30 percent germination.

The plants thus obtained from seed have shown me, on all the species observed, that they were heterostylous, i.e., certain plants of any one species bore only short-styled flowers (the style being shorter than the anther filament), other plants of the same species bearing long-styled flowers (styles longer than the filament). This character is only visible on really fresh flowers, not on dried ones, not even on barely faded flowers. This is a fact which explains why botanists, working on dead material, never observed this state of affairs.

From the seed gathered on our grounds, from small populations comprising plants of the two formulas (or even three; certain plants have the style inserted between the two rows of anthers, as is the case within the genus *Oxalis*), I got some germination; the percentage was the same as with "indigenous" seed, i.e., from 5 to 30 per cent. Then, as is the case with other heterostylous plants (primulas, oxalis, etc.), it appears that acantholimons, in general, give fertile seed only when cross-pollination happens between plants of different formulas.

The seeds I sent for this year's distribution were gathered by myself from small populations, where each species is represented by at least two of the possible formulas; therefore it is reasonable to expect a few germinations, possibly, 5 to 30 per cent. I must add that acantholimons germinate very quickly. They take less than a week, if the temperature is high enough; I even had germination in 36 hours under optimal conditions (68 to 77 degrees F. and high humidity). Seeds not germinated after ten days can be discarded, though I got one single germination after three months. I would like to receive reports from successful and unsuccessful growers of my seeds.

Brassicella richeri: a wild "cabbage" endemic to the Southwest Alps; showy and easy, in good loam, but can attain two feet, or more.

Campanula thyrsoides: a monocarpic campanula, with a spike of pale yellow flowers, to 10 or 20 inches. Some find it striking, some find it unshowy; good drainage and no lime; full sun.

Chamaepeuce diacantha: a Composite, thistle-like and horribly spiny, with beautiful leaves; monocarpic; sun.

Erysimum ochroleucum: of the *E. helveticum* kindred, but better: sun.

Genista radiata: a "different" broom, odd and showy; attains three feet or so; sun and dryness.

Hieracium pamphilii: a natural hybrid between *H. villosum* and *H. lanatum*, better than its parents; though its flowers are quite showy, its principal interest lies in its white shaggy leaves; not rampant; seeds itself mildly.

Jasionella bulgarica: a Bulgarian endemic, akin to *Jasione humilis*, with paler blue flowers.

Lilium pyrenaicum, *L. carniolicum* and *L. rubrum*: all three of a group of South European mountaineers; easy (though slow from seed) in good soil and full sun, not too dry. *L. pyrenaicum* is a little too tall for the rock garden proper; the other two fit better.

Macrotomia echioides (*Arnebia echioides*) the well known Prophet's flower; generally said to prefer dryness (as are the true arnebias). I cannot grow it satisfactorily in dry soil for it asks for deep soil and moist, not wet, ground.

Senecio leucophyllus: one of the best silver-leaved senecios; not too easy; sun, but resents dryness at the roots.

Veronica schistosa: quite recently introduced from Russia; seems very akin to *Veronica gentianoides*, and quite as easy.

Wulfenia carinthiaca: too well known to need description, this cousin of the veronicas likes moisture, and sun.

R. RUFFIER-LANCHE, *Grenoble, France*

NAKAI'S HOSTA—A preliminary report on a new *Hosta* should be on record, as a few seeds are available in this year's seed list. On March 5, 1958, seeds were received from the Botanic Garden, Gothenburg, Sweden, of what was listed as *Hosta nakaiana* Maekawa. Flowering during the summer of 1963 of the one plant raised, revealed a plant of some distinctiveness. For what seemed a long time, each flowering stalk carried a tight ball of incurved bracts and there was very little elongation as it grew larger and finally released the flower buds. The shape and color of the flowers was a close imitation of *Hosta ventricosa*, but this first-year-of-flowering plant had a habit and leaf-size just about one-half that of its closest possible ally. Time of flowering was just about even with *H. ventricosa*.

Hylander's monograph (1954) gives no mention of this species, nor is it mentioned in later popular articles. Quite possibly Maekawa's monograph (1940) will give information on its botanical status when I am able to consult it.

BERNARD HARKNESS, *Rochester, N. Y.*

CORRECTIONS AND EXPLANATIONS—The gremlins have been busy again, or perhaps after many years of correspondence, Mr. Harkness is still unable to decode my hieroglyphics. At any rate, two of the items appearing in the 1964 Seed list appear under the wrong generic names: No. 962, *Penstemon parryi* should be *Primula parryi*, of more than slightly different appearance and requirements, while No. 968, *Phacelia* sp. should probably be *Physaria* sp.

Several species are followed by "BSBE" and a number, to be translated into Bowles Scholarship Botanical Expedition to Iran, in the past summer. More seeds of several items were sent me than I could use, and were passed on to the Exchange. *Gypsophila* sp. proved to be, when the field notes arrived, no less than *Gypsophila aretioides*; so far as I know, its first appearance in any seed list!

BSBE 1549 labelled *Tulipa* sp. on the packet, appears in the field notes

as *Fritillaria* sp. There are no seeds on hand from which I can attempt to determine to which genus these collected seeds actually belong. *Allium* sp., No. 49 of the Seed list, is BSBE 2491, with yellow flowers. Other than this, the field notes give no description of the plants appearing under the numbers sent the Exchange.

DR. C. R. WORTH, *Ithaca, New York*

SEED FOR SPRING DELIVERY—Last year I made no contribution to the Seed Exchange, although I have benefited by it to a very large extent. I had hoped to do somewhat better this year, but the prospects are not too good. I have visited areas to which I have access and the seed crop appears very small. I can blame this on the severity of our 1962-63 winter.

From my own garden I can promise *Kalmia angustifolia* and *K. cuneata*. If you are interested in some of the more common ones such as *Kalmia latifolia*, *Azalea calendulacea*, *Rhododendron maximum*, *R. catawiense*, and *R. carolinianum*, there will be plenty available.

I am planning a trip just after the first of next month to another area which may produce *Lyonia mariana*, *L. lucida*, *Cyrilla racemiflora*, *Ilex glabra*, and quite possibly some others. These may be too late to meet the November 15th deadline, but I will do my best to get them to you if possible.

Do you ever arrange to have seed shipped direct from producer to consumer? Certain seeds, *Sanguinaria canadensis*, *Shortia galacifolia*, and others germinate very much better if planted very soon after being gathered. I will have enough of the above mentioned species available next spring, and I will be glad to supply fresh seed as long as my supply lasts. Later in the season *Dionaea muscipula*, which requires the same treatment, will be available.

T. S. SHINN, *Ashville, N. C. 28801*

(Editor's Note) The above letter was written on October 12, 1963 and was addressed to Mr. Harkness. Should anyone wish to avail himself of Mr. Shinn's kind offer of spring delivery of fresh seed as listed by him, it is suggested that when communicating with him it would be thoughtful to enclose a self-addressed and stamped envelope. Mr. Shinn's street number is 11 Rosewood Ave.

NOTES FROM THE NORTHWEST

SALLIE D. ALLEN, *Seattle, Wash.*

YEAR AROUND INTEREST:—The quiet dignity of the wide variety of dwarf conifers we have to choose from should not be overlooked in our rock gardens, as they can form a foundation and background for the gay profusion of alpine bloom, lending stability to the ever-changing scene. The texture of foliage as well as diverse habits, from complete symmetry to free miniature form, combined with variation in coloring to include yellows and all shades of green tend to create a complete picture of year around interest.

Chamaecyparis pisifera compacta nana aurea (a name far out of proportion in size to this small conifer) was described as rather an oddity, although it had considerable appeal to many of us who are intrigued by the curiosities of the plant world. The ten year old specimen displayed had gained the height of perhaps four inches and the width of approximately five inches, which indicates that it would remain a true dwarf in the garden and maintain its compact golden form. Knowledge of the yearly growth rate should be acquired before purchasing desired plant material because dwarf conifers resent disturbance once they are established. How often have we obtained shrubs we thought were dwarf or slow growing only to discover to our sorrow that they had outgrown their allotted space in a very few years.

HARDY CYCLAMEN:—Not all of the known *Cyclamen* species are readily available, however the following chart demonstrates the almost year around blooming calendar, August to May, and shows that, regardless of the time of flowering, all seed ripens in either June or July. The information contained under this heading is the findings of Dr. J. Leon Sealey, of Seattle, who has spent many years studying, collecting, and growing *Cyclamen* species in the Puget Sound area.

Species	Bloom	Seed	Species	Bloom	Seed
<i>europacum</i>	Aug.-May	July	<i>orbiculatum</i>	Nov.-Mar.	June
<i>neapolitanum</i>	Sept.-Nov.	July	<i>libanoticum</i>	Feb.-Mar.	July
<i>africanum</i>	Sept.-Nov.	July	<i>pseud-ibericum</i>	Feb.-Mar.	July
<i>graecum</i>	Sept.-Oct.	July	<i>persicum</i>	Jan.-Apr.	July
<i>cyprium</i>	Sept.-Oct.	July	<i>balearicum</i>	Mar.-Apr.	July
<i>rohlfsianum</i>	Sept.-Nov.	July	<i>repandum</i>	Apr.-May	July
<i>cilicium</i>	Oct.-Dec.	June	<i>creticum</i>	Apr.-May	July
<i>alpinum</i>	Nov.-Jan.	June			

EUROPEAN HOLIDAY:—Sixty-eight members of the Northwest Unit gathered together for our annual fall banquet to enjoy a pleasant dinner and a program of slides by two of our members, Mr. and Mrs. H. H. Miller who had recently returned from a six month trip in Europe. Their slides could only skim some of the highlights of their interesting tour of sixteen countries, which included the Swiss Alps, botanic, and private gardens.

Especially meaningful to many of us was the portion on their visit to England and Scotland where they met a number of our friends and had the opportunity to see and photograph their gardens. Although the Millers were there in August when much of the plant material was not in bloom, they did show us the difficult and intriguing *Campanula Zoysii* beautifully grown and flowered by Mr. Roy Elliott, Editor of the Alpine Garden Society Bulletin, as well as slides of his fascinating rock garden.

In Northumberland, England, Altha and Harold Miller had the pleasure of visiting Mr. R. B. Cooke who is well known for his vast knowledge of rare plants, especially the Ericaceae family, and has the reputation for growing them to perfection. A massive planting of *Orphanidesia gaultherioides*, robust and healthy, gave conclusive testimony to this fact. *Cassiope* and *Phyllodoce* were used in quantity in lovely plantings with rare dwarf species *Rhododendron* in the background.

In these brief notes it is impossible to adequately describe the delightful garden of Major General Murray-Lyon, or the others mentioned, thus it is hoped that we may prevail upon the Millers to write a detailed account for publication in the *Bulletin* in the very near future.

PICTURES BY THE MEMBERS:—A full and rewarding year ended with a favorite activity of us all, a program composed of pictures by the members recounting the experiences of memorable trips of the past year, some of far away places including Europe and Mexico, while others were of familiar Northwest mountain retreats. Each member is asked to bring ten of his best slides, which together with individual narrative makes up a full program both interesting and entertaining.

Outstanding among many examples of superb photography was *Douglasia laevigata* in vivid profusion on a rocky hillside on Hurricane Ridge in the Olympic National Park. A curious form of our native maidenhair fern, *Adiantum*

pedatum was recorded from above the Teanaway River on the eastern slope of the Cascades. Normally the fronds resemble an open fan, however, in this plant the pinnae could scarcely be distinguished, one from another, as if the fan were closed and swept upward in a most unusual manner. A flood of nostalgic memories was created by a lovely sunrise view of Mt. Rainier; how many times in years gone past have we thrilled at this wondrous early morning sight!

An unexpected pleasure came in the way of three tapes of BBC broadcasts by Mr. Roy Elliott entitled, "Character in the Rock Garden", "Alpine Houses", and "The Tufa Garden". In light of the recent publication of Mr. Elliott's delightful book, *Alpine Gardening*, and having just recently seen slides of him and his garden, the tapes were of special interest. They contained much valuable information presented in Mr. Elliott's charming manner.

A PENNSYLVANIA GARDEN IN SPRING

DORETTA KLABER, *Quakertown, Pa.*

APRIL—In spite of cold days spring has really come. Hepaticas proclaim it in protected spots, and everywhere new growth is showing. Only the uninitiated or those far from growing plants can miss the thrill of these early spring days. The geese have been flying north, honking away in their wonderful "V" formation. There is a golden haze in the woods hereabouts, for the spice bush is in bloom. Other early trees and shrubs are showing flowers and the fruit trees are covered with fat buds.

The bright coloring of the hepaticas is only part of the pleasure they give us, for now the new leaves unfurl from furry covers and these firm, leathery leaves will be handsome and decorative for the rest of the year. But April, perhaps most of all, says, "Primroses and Spring". What lovely words! We have visions of the English countryside, though we may never have been there, and our woods and half shady corners fairly shout with the joy of primroses in bloom. And now the little bulbs and all the early small flowers of the world, from mountain and streamside and meadow, daily add their colorful bit to the mosaic that is covering the earth.

The whole countryside has come alive. There is as much variety of color as in autumn, but instead of the rich warm colors of sunset, it is the softer, tenderer coloring of early sunrise. It changes and deepens day by day.

This is a time for work in garden and grounds. But don't let the insistent chores rob you of this rare season. We have too few springs in our lives; we can't afford to miss a bit of any one of them. Take time out to look and listen, and literally, to enjoy life!

MAY—A few hot days and heavy rains and the expectant look of early spring is already gone. The gala month of the year is here, brilliant with color and heady with fragrance. A mad month of work for the gardener; an exuberant month when the world about us comes into full leaf and bloom.

The flowering fruit trees make a festival of the hills and fields. The lilacs and sweet viburnum and a thousand flowers brighten our homes and fill the air with intoxication. The unspoiled woods and roadsides are snowed under with the white dogwood. This dogwood is, perhaps, our loveliest native small tree. It provides year round beauty. In winter its horizontal branching with gray buds rising at the end of each small twig is beautiful to behold. Its spring flowering is a perennial wonder. In summer it provides light shade and is in scale with the many small houses in the land, while its fine leaves gradually



Dodecatheon amethystinum



Polemonium pulcherrimum

turn from green to red. In autumn its clustered fruits bejewel every branch. Now in May it is at its height. One vision it planted in abundance along all the bare pikes, spangling parks and playgrounds, adding charm to all the little houses along the roads.

May is a month of sudden weather changes. On some days it is cold and windy—then rains and fogs—but now and then the warm sunshine comes out and all the growing things respond. The sudden rains may spoil picnics and outings, but to the grower of plants, the true gardener, it means welcome moisture, ease of weeding, and the sure knowledge that now the plants will fulfill his winter dreams.

JUNE—The mad rush of May work in the garden is over. We were at it early and late. How we ached at night—but how we loved it! The plants rushed into bloom, heels-over-head, and everything flowered at once. Everything? It only seemed that way. The burning torch has been passed on, and now in June it touches the iris, the roses, the pinks and peonies and columbines, and one after another they light up like windows in a city at night.

This is a time of serenity in garden and countryside. Nature has calmed down, the weather is usually more equable, and all the trees and shrubs are in fresh green leaf. We gardeners, for a little while at least, are at peace with the world, revelling in the soft air and sunshine, careless of the showers, gratefully accepting the riches of color and form and fragrance all about us.

June is not as exciting a month as April, nor so overwhelming as May. But these are the days we would hold on to if we could, for they epitomize the very meaning of a garden. For a garden should be, most of all, a peaceful, tranquil place, set apart from cares and strains—a place to relax—a place of quiet delight for all our senses.

OMNIUM-GATHERUM

In this issue of the *Bulletin* there are voluminous notes concerning new, rare, and otherwise particularly interesting seeds offered to the members through this year's Seed Exchange list. These notes are written by certain seed contributors who are solicitous for their seed's welfare and are anxious that the lovely potentials locked up in these seeds be realized by the eventual recipients.

But, are these notes as useful as they should be? The editor thinks not. The notes are not at fault, but availability timing is. The seed lists reach the members midway in January with the January *Bulletin*. Seeds requested are mailed out in February and March as the orders come in, and, in many instances, are sown prior to the Seed Exchange's closing date of April 15th. Seed notes, as printed in the April *Bulletin*, reach the members at approximately this same date. This is often too late to be of help; the seeds may have been planted without benefit of the note's specialized information. What can be done to make these notes available to the members prior to seed-planting time?

There are several possibilities: 1—Send these special instructions with the appropriate seed packets when mailed. This is the commercial practice, but wholly impractical for us. 2—Include the notes in the January *Bulletin*. This would be fine, but again there are timing problems. Such notes would have to reach the editor by November 1st. The deadline for sending seeds to the Seed Exchange is November 15th. It is not logical to expect a seed contributor to write and send his notes to the editor before he knows exactly what seeds will be available and are sent to the Exchange. 3—Send the notes along with the seeds to the Director of the Seed Exchange. The director could then edit the notes and send them to the printer to be incorporated in the seed list as a special feature. Thus the seed

recipient would receive the seed list and the instructions at the same time and could more intelligently make his selection of seeds, and be armed with additional instructions and information at seed-planting time.

Objections to this latter possibility are two-fold: 1—It would entail more work for Mr. Harkness, our director, at a time when he is furiously busy with the seeds themselves, and 2—there would be additional printing expense. It has been suggested that a charge of ten cents per packet would bring in the necessary extra money.

In the interest of better serving the members who take part in the Seed Exchange, the editor hopes that the Seed Exchange Director and the officers of the Society will review this problem and take whatever steps they think necessary. There should be better co-ordination in effect for the 1965 seed exchange operation.

As for the 1964 seed list, it is gratifying to report that statistically 1964 was an improvement in every way over that of 1963. About 300 more items were contributed and there were more contributors from overseas and from both the eastern and the western parts of the United States. There were also many new species, etc. This indicates an awakened interest in our Seed Exchange, and this in the face of a poor year for seed ripening in many parts of the world.

To those who scan the "New Member" list in this issue it must be apparent at once that some unusual activity has centered in Omaha, Nebraska. A quick glance at the inside cover will reveal a new group, and a new Regional Chairman. The details available to the editor are not complete, as no direct word has been received from Mrs. Lillian Leddy, the chairman of the new group. ARGs members residing in Iowa, Nebraska, North and South Dakota, Wyoming, Kansas, Minnesota, Missouri, and possibly Montana are eligible to belong to this group, as far as can be learned. Organizational activities centering around the cities of Chicago, Detroit, and San Francisco are also reported. It is good to learn of this activity, and certainly all members will welcome the new Midwestern Group and the other groups and subgroups when they are fully organized.

In connection with the recruiting of new members for our Society one member from Maine thinks that many new members could be obtained if there were more articles in the *Bulletin* which would be elemental enough to interest incipient rock gardeners and start them on the way to becoming enthusiastic, full-fledged rock gardeners. These articles, in this case, should be instructive in basic rock garden design, adornment and philosophy, and be of such a nature as to lead the neophyte gently through the gate into the specialized sphere of the rarer plants and then down the glorious path that leads to one's own rock garden. There is nothing that so stimulates a novice's desire for botanical knowledge as becoming a rock gardener and somewhere along the way the dread hurdle of Latinized names will have been cleared without conscious effort.

The following is a cordial invitation to you Canadian and overseas members to come a bit closer into the family circle of our Society. When you read the *Bulletin*, and it is hoped that you do, you read mostly of what is happening in the gardens, the mountains, and the woodlands of the United States. You read how a New Yorker transplants his seedlings; you climb a South Dakota mountain with Mr. Barr; you struggle with somewhat adverse climatic conditions trying to perfect a rock garden in California; you get a glimpse of what goes on in the states of Oregon and Washington; and a member from Michigan tells you about

"Trillium Madness". North Carolina shows you a gem-like flowering moss that is not yet in cultivation, and you are intrigued with the Seed Exchange list.

Then your eyes light on a really familiar name—one you know well who lives in Scotland. Yet Maj. Gen. Murray-Lyon writes about plants from our side of the ocean in his charming article "Americans Abroad". Nevertheless, his article does bring us closer, for he writes of some very nice behavior of American plants in a Scottish garden. But we need more, many more, articles from you members who reside overseas and over the border.

We need to be told about Midlothian gardens, and gardens elsewhere in Scotland, too. We want to read in our own *Bulletin* of those English gardens that to us seem perfection. An article from Ireland would thrill us. Why the great silence in the north? Why never a journalistic contribution from the Land of the Maple Leaf? New Zealand writers have been good to the *Bulletin*, and soon we expect to hear more from them. Down in Chili there is a lone member who must have much of interest to tell us. In Japan there are members who must wish to write of their lovely native plants, many of them favorites here.

In Europe are members living in Sweden, Denmark, Czechoslovakia, and Holland and Belgium, too, whose gardening methods with alpines, whose successes and failures with precious plants would be read with avid interest here in North America. Austria, Germany, Italy, and France, sharers with proud Switzerland of the flower-laden Alps, all five are the homes of members whose every word, should they appear in the *Bulletin*, would be read with grateful pleasure and a touch of envy.

You European members, gardeners all, and flower lovers every one, come closer to us here across the broad waters. We would know you better! Tell us of your experiences in garden and on mountain steep! Tell us of gentian, of wind-flower, and of Alpenrose. Tell us of high mountain passes where flowers bloom in beauty, grace, and innocence, with snow-mantled peaks all around, with heaven's blue above, and the wind blowing full and sweet.

Do not let the language barrier discourage you. If you do not care to write an article or a paragraph for the *Bulletin*, in English, then write it in your own language. Let us worry about the translation here. All of you who write for our Society's publication, wherever you live, will be helping to stimulate the love of plants, of rock gardening, of botanical study; you will be cementing friendships and, who knows, you may even be contributing to peace between nations. Best of all, you will be sharing. When you read the *Bulletin*, you are receiving; when you write for the *Bulletin*, you are giving. To fully realize the benefits of membership in this, or any other organization, you will find pleasure and satisfaction in doing both.

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