

BULLETIN

of the

AMERICAN ROCK GARDEN SOCIETY

Vol. 10

JULY, 1952

No. 3



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G. G. Nearing, Editor

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GROUND COVERERS FOR BULBS

WILL INGWERSEN, ENGLAND

WHAT plants to use as carpeters to clothe the ground where bulbs are growing, to supply interest when these are at rest, and a pleasing foil to their flowers when they are in evidence, is a vexed question, and one about which much ink has been spilled. Some gardeners subscribe to the theory that bulbs need a thorough ripening when dormant, and, feeling that a carpet of vegetation on the ground above would defeat this object, studiously avoid planting anything over their bulbs, or else carefully lift them and dry them when they have gone to rest.

I used to lean towards this school of thought myself, but I gradually came to the conclusion that even bulbs from hot, sunny climates were not so insistent in their demand for a complete arid baking as I had thought. I also learned that a great many bulbs have a far shorter natural period of complete rest than might be imagined from their comparatively brief appearance above ground. Even when no leaves or growth of any kind is to be seen, there is usually enough root action going on to deal with such moisture as reaches them in well drained soil.

Then too, reflect how many of the bulbous plants we grow in our gardens are accustomed to grow in woodland, or amongst dense herbage? This fact was made increasingly plain to me as my travels in search of wild plants grew wider, and I made the acquaintance of more and more bulbs in their native haunts. For as many bulbs as I discovered growing in bare, stony ground, I found as many, or even more, so confused and intermixed with the roots of evergreen plants that they could only with the greatest difficulty be extricated without damage.

Let me, then, describe a few of the plants I have used to clothe the ground over and amongst my bulbs, and in the telling, reveal one or two very happy combinations—often the result of a happy chance rather than a deliberately contrived association. One such pleasant blending arranged itself when a self-sown seedling of *Geranium sanguineum lancastricense* grew over a pocket in a limestone rock garden which was filled with corms of *Crocus speciosus Aitchisonii*. The geranium formed a carpet of interlaced stems and leaves about two inches high, and, in late September, the leaves adopted their characteristic autumn tints of red and bronze. Through this colorful mat thrust the naked stems of the crocus, and the large, deep purple-blue, goblet-shaped flowers expanded a

few inches above the geranium leaves and formed a picture of striking beauty. This association has continued undisturbed for a number of years. I occasionally restrict the geranium to keep it within bounds, and the crocus is increasing vigorously, showing no dislike for being so effectively blanketed.

I like to carpet the ground above such bulbs as the dainty miniature Daffodils with *Raoulia australis*. This pretty New Zealand plant forms a mere skin of sheer silver on the surface of the ground, and delights in the same stony, porous soil beloved by the daffodils, many of which come from the sun-baked, impoverished hillsides of Spain and Portugal (an exception is found in *Narcissus cyclamineus*, which loves to grow in cool, moist soil, and can be happily naturalized on mossed banks, beneath the shade of tall trees. Visitors to the gardens of the Royal Horticultural Society at Wisley, in Surrey, during the early spring, are always entranced by the sight of myriads of *N. cyclamineus* gleaming in the soft woodland light against a bank of green moss).

I find that the *Raoulia* makes a carpet which is not too dense to be pierced by even the tiniest of slender-stemmed bulbs, and it provides a singularly effective foil for their flowers. It is advisable to clear away the foliage of the bulbs as soon as it turns yellow and can be removed, as, if it is left to decay whilst resting on the argent carpets of the *Raoulia*, damage may be caused, and unsightly brown patches appear. Incidentally, the resting period of the baby narcissus species when left in the ground is very short indeed. It is safe to say that, by the time one is pulling away the shriveled leaves above ground, new root action has commenced at the base of the bulb, and it is by no means uncommon for such species as *N. Bulbocodium*, the charming hoop petticoat daffodil, to exhibit leaves above the ground well before Christmas.

A rather unusual plant which I often use as a carpeter for bulbs is the dainty little *Lewisia*-cousin, *Montia parviflora*. It is an American native plant, and, in Britain at least, little more than an annual, but it is one of those friendly plants which is always with us, yet contrives never to become a nuisance. It has small, shining, rather fleshy leaves in loose rosette formation, and the bright pink flowers are carried in profusion on spreading, thread-like stems and it blossoms from early summer until late autumn. It provides just sufficient cover to break bareness of empty spaces where bulbs are planted, but are not yet in evidence.

Another happy self-contrived association which lasted for a number of years was the blending of a colony of bright yellow, early flowering crocus with a carpet of *Saxifraga oppositifolia*. The glowing red flowers and deep green foliage of the saxifraga provided a perfect setting for the brilliant crocus blossoms. The two dwelt amicably together until the unfortunate day when the *Saxifraga* had to be uprooted to make stock. A nurseryman's lot is not a happy one, for he has always to be tearing up established plants in order to increase them, or destroying their symmetry by taking from them great quantities of cuttings.

For those bulbs which really do ask for a summer baking which can only be provided by growing them in full sun, and often in poor, stony soil, many of the carpeting Stonecrops (*Sedums*) form an ideal covering. These will endure any amount of drought with equanimity, and are all the better for being starved in hungry ground. They are as attractive in leaf as they are in flower, and I have seen many of the Tulip species flaunting their vivid flowers with splendid effect above carpets of close growing sedums. Ideal varieties are *SS. lydium, acre* (and its various forms), *sexangulare, rupestris*, forms of *album*, and many others. *Sternbergia lutea*, the beautiful autumn flowering, crocus-like flower—and probably the original "Lily-of-the-Field"—is extremely well displayed when growing amongst *Sedum spathulifolium purpureum*. Another happy association

is to plant bulbs of *Sternbergia* amongst autumn flowering gentians, such as *G. sino-ornata*.

Snowdrops are bulbs which cry out for a carpet of green through which to grow. They flower so early in the year, when heavy rain is frequent, that their pure flowers are apt to be spoiled by splashes of mud. I grow a number of them very successfully beneath a carpet of *Gentiana acaulis*, and their lovely blossoms are seen to great advantage against the deep green of the gentian foliage. Incidentally, I have always found that the best time to transplant *Galanthus* species was when they were in full flower. Their bulbs deeply resent being lifted and dried and they should not be out of the soil for more than a very few days even when dormant.

PLANT HUNTING ON BEARTOOTH PLATEAU

JAMES K. McGRATH, FORT LEE, N. J.

IT HAS often been said that most rock gardeners in this country are better acquainted with European or Asiatic plants than with their own native flora. Since we felt particularly ignorant concerning the fascinating plants of our western mountains, we decided on a trip to the northern Rockies.

After much consultation of various botanical journals, pamphlets and herbarium records, we decided to take the advice of a fellow member of the Society, Dr. C. R. Worth, and visit the Beartooth Plateau area of Montana and Wyoming, as suggested by him in the May-June, 1950 issue of the Bulletin.

Beartooth Plateau is one of several high-altitude tablelands scattered throughout the Rocky Mountain system. You can locate this area on your map by running a line about twenty-five miles southwest from Red Lodge, Montana. Because the entire plateau straddles the Montana-Wyoming state line, collectors have an opportunity to study plants in both states without leaving the high elevation.

Practically all of Beartooth is above 9,000 feet in altitude. The typical grasslands, meadows and rock fields characteristic of alpine terrain throughout the western mountains, offer a wide variety of rock plants massed in great numbers.

Happily enough, this fascinating high country can be reached with little difficulty during the summer months. A well surfaced automobile road crosses the plateau between the towns of Red Lodge and Cooke City, Montana. For plant hunters with time to make extensive botanical explorations, Beartooth Lodge, picturesquely situated on a beautiful mountain lake at 9,000 feet, right in the heart of superb alpine country, offers excellent accommodations.

Starting from Red Lodge, one of the most spectacular highways in western United States ascends rapidly by a series of skillfully engineered shelves or switchbacks cut into the rocky sides of the mountain. Breathtaking views appear on all sides as the road winds back and forth, up through magnificent spruce and fir forests to the top.

On the gravelly slopes of the switchbacks we noted the first of the interesting rock plants we had come to see, the mountain Penstemon, *P. fruticosus*, great masses of whose lovely lavender flowers are found throughout the mountains wherever similar conditions prevail. Patches of another mountain lover, *Phacelia sericea*, exhibit fuzzy purple spikes from a nearby rock slide. Colorful displays of bright yellow or orange Senecios, scarlet and rose Castillejas, and the rich purple flowers of Delphiniums greeted us from every rocky slope and slide.

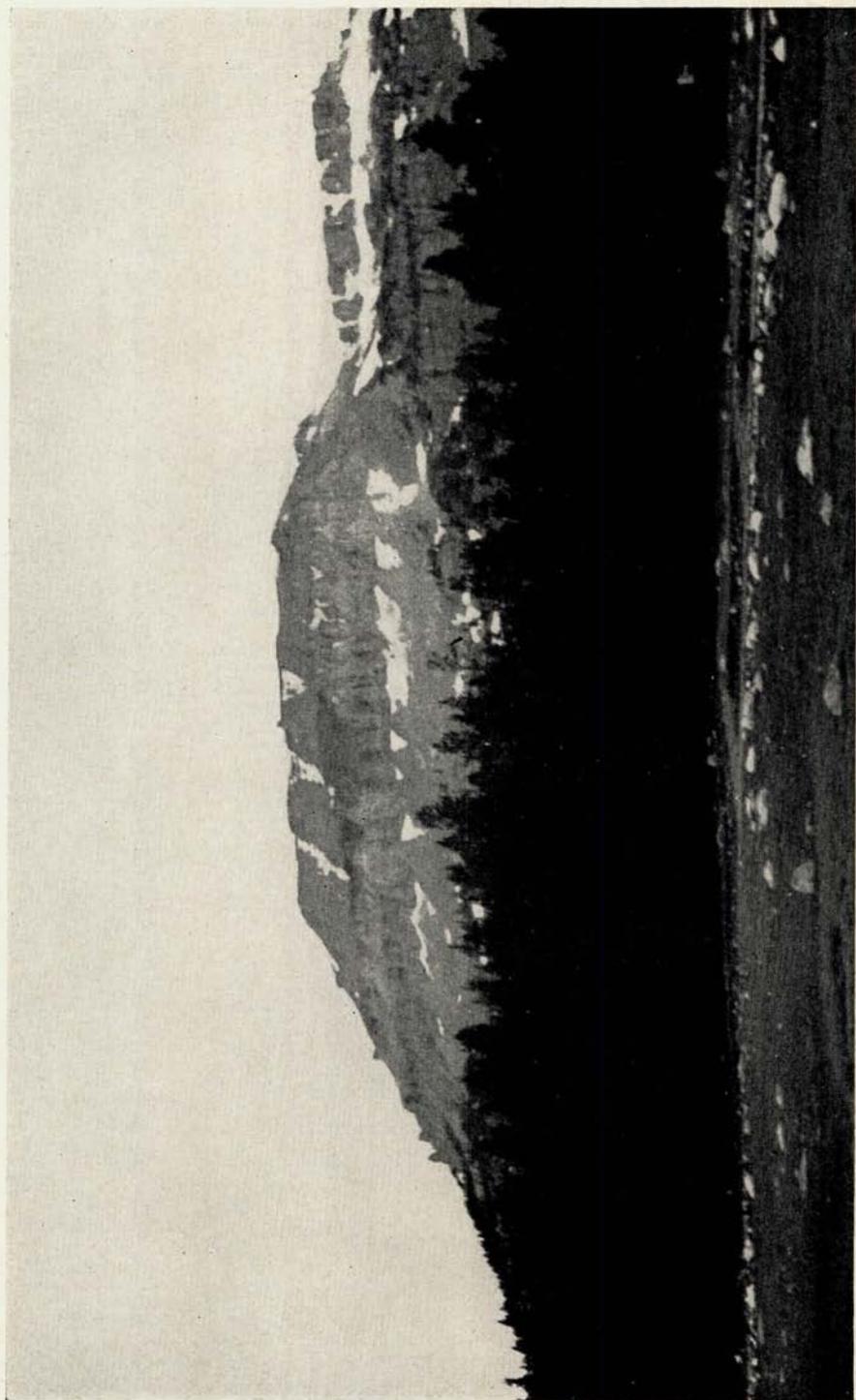


Photo by James K. McGrath
Beartooth Butte. In foreground grow *Kalmia polifolia* var. *microphylla*, *Salix Dodgana*, *Phyllodoce empetriformis*, etc.

But our main goal was the true alpine country, and our route continued upward, until suddenly the road emerged above timberline, and we rolled out onto the alpine meadows at the summit of the plateau. Large patches of snow covered much of the surface, despite the fact that this was July fourth. A walk along the edges of these snowbanks produced an unexpected find, a fine red dust on the surface of the snow itself. Closer examination revealed that we had found our first alpine, the famous red snow mentioned by many arctic explorers in their descriptions of travels in the polar regions. Red snow is really a simple red alga, *Sphaerella nivalis*, our first alpine to be sure, but no candidate for a place in the rock garden.

A brief search brought to light the first of the flowering alpiners, *Polemonium viscosum*, with lovely soft blue flowers dotting the alpine meadow by the hundreds wherever the snow had melted. The season of bloom on these heights was just beginning. Farther on, at our feet, the pretty pink stars of the moss campion, *Silene acaulis*, sprang out of bright green, felt-like sods, and intermingled with the *Silene* were the creamy white blossoms of the mountain dryad, *Dryas octopetala*, above its curiously wrinkled leaves.

A most attractive dwarf alpine bluebell, *Mertensia Tweedyi*, was present in great quantities, and we collected several plants with the hope that its tiny blue flowers will some day add a bit of the Rockies to an appropriate corner of the rock garden. Here and there the small white lilies of *Lloydia serotina* were much in evidence. Of particular interest too was an outpost of pasque flowers, *Anemone patens Nuttalliana*, a familiar species on the plains below, which has established itself also well above the clouds. These plants are considerably dwarfed by the alpine conditions. Some of them have already gone to seed, while others are just starting to bloom, thus illustrating the short growth cycle between life and death of all plants living in the high country. Numerous clumps of the bright yellow-flowered mountain avens, *Sieversia turbinata* lay everywhere as far as the eye could see out across the alpine meadows, easily one of the most common of all plants in these mountains.

On the highest section of the plateau, 11,000 feet, are spread wonderfully rich rock fields. Our eyes were dazzled with natural rock gardens which would make any rock gardener gasp with delight, and wistfully wish he could duplicate a small portion of this finest handiwork of nature. Rocky crevices and outcroppings are everywhere covered with countless plants of that most celebrated of the true alpiners, *Eritrichium argenteum*, whose flat, tiny, silver-haired mat is studded with pale sky-blue flowers. Certainly a sight which made this pilgrimage to the mountains an immediate success even if we had seen nothing further. Unfortunately, no one has yet solved the problem of bringing this choice plant under cultivation. One must, like Mahomet, go to the mountain to see *Eritrichium* in all its glory.

Lovely, brilliant yellow-flowered mountain saxifrage, *Saxifraga chrysantha*, was also present in great abundance. Growing with it, and making an extremely beautiful contrast, were splendid rose-purple masses of *Saxifraga oppositifolia* spilling in and out of the rock debris. This saxifrage is an old friend of mine. During the war I made its acquaintance on the rocky shore of a distant fjord in southern Greenland. Again in peace time it greeted me from a certain rocky precipice in Vermont. Now once more the long-standing friendship was renewed on a windswept summit of the high Rockies.

Other noteworthy rock plants lending attractive colors to this gala floral display in the rock fields were *Phlox caespitosa*, the normal white-flowered plant and several rich lavender forms, some of which were quickly recorded on Kodachrome film. The odd little whiplash saxifrage, rather less abundant than its

mentioned relatives appeared with neat butter-yellow bloom and the interesting propagating runners or whips which give both its common name and the scientific, *Saxifraga flagellaris*.

The dominant plant among these rock lovers was the so-called alpine candy-tuft, *Smelkowskia americana*, which resembles vaguely a diminutive *Iberis sempervirens*, though any attempt at definite comparison falls down. *Smelkowskia* is a weirdly beautiful alpine with remarkable steely blue, much divided foliage, each leaf looking as though it had been dipped in frost. Tight, compact little clusters of tidy white flowers top this most intriguing plant. If it could be grown in rock gardens the way the plant appears in these rock fields, I am sure it would come close to the head of the list of favorite alpine plants with every American rock gardener. Several plants were secured, but unfortunately did not survive the trip home. Someone should certainly attempt to bring this handsome fellow into cultivation.

Further search for the rare or unusual brought to our attention a small mound of tightly curled tiny dark green leaves and strange flesh-colored flowers. Much study and thought was given to this enigma before the mystery was solved. Finally when one of the leaves was unrolled and flattened out, presto, the unknown was identified. The leaf belonged unmistakably to a member of the clovers. The plant was of course the alpine clover, *Trifolium nanum*. This would be another prize for gardeners if it could be induced to retain the mound-like growth and compact flowering habit which make it such a completely delightful little plant on its native soil. The rootstock of *Trifolium nanum* goes "directly to China" suggesting that seed would be the most successful method of raising this species.

Mountain daisies grew profusely among the rocks, appearing to belong all to one species, *Erigeron compositus*, familiar to most rock gardeners. We intended to study the rayless variety, *E. compositus discoideus*, but no specimens were found. Further down the slopes grew another mountain daisy, *E. pumilus*, with narrow undivided leaves.

For a change of pace, we decided to investigate some of the marshes and swales along the borders of several high mountain lakes in the vicinity. Here a different group of plants appeared. Along melting snowbanks, thousands of white marsh marigolds, *Caltha leptosepala*, and pale sulphur-tinted globe-flowers, *Trollius albiflorus*, remarkably like our easterner, *T. laxus*, marched forth from beneath the snow as fast as it receded. Large numbers of yellow snow buttercups, *Ranunculus adoneus*, tried to match the marigolds and globe-flowers in sheer numbers.

Here too the early saxifrage, *Saxifraga rhomboidea*, displayed its round white flower clusters. Many of these moist swales were studded with boulders and outcroppings that supported a flora of their own. Some wore a colorful necklace-like edging of the pretty dwarf variety of the bog laurel, *Kalmia polifolia* var. *microphylla*. The dainty pink blossoms are diminutive replicas of our familiar mountain laurel, *K. latifolia*, of eastern woodlands. The dwarf alpine willow, *Salix Dodgeana*, and mountain heath, *Phyllodoce empetriformis*, grew abundantly from the crevices in many of the outcroppings raised above the surrounding marshy area. King's crown, *Sedum integrifolium*, was starting to unfold its dull crimson flower heads, to signal the approach of the alpine summer.

Moving down the mountain to Beartooth Lodge, plans were made to explore the slopes of the striking butte formation just across the lake. Beartooth Butte is a monumental mass of magnificently colored red and brown sandstone. We are told that it is one of the most interesting geological for-

mations in the west, chiefly due to the fact that buttes are seldom found at altitudes of 10,000 feet. On the north side are located some of the highest marine fossil beds in the United States.

The basal slopes have much of interest to the botanist as well as the geologist. One finds many plants of the shooting star, *Dodecatheon pauciflorum*, covering acres of ground with delicate magenta "mosquito bills." Several white-flowered plants grew among the normally tinted ones. This proved a particularly fine locality for the dainty yellow bells, *Fritillaria pudica*, one of the few of its race which responds satisfactorily season after season in our rock gardens, with its lovely yellow bell-shaped blooms.

We were particularly pleased to obtain specimens of our first *Lewisia*, *L. pygmaea*, like a tiny edition of the familiar bitterroot, *L. rediviva*. *Lewisia pygmaea* seems to flower much more easily than its larger relative, and has made its appearance on schedule for the past two seasons, the neat pink blooms peeping out of the narrowly linear leaves to make an attractive little display. The windflower, *Anemone globosa*, both white and red-flowered plants, flourished on the hot dry south slope of the butte, together with the historically interesting blue flax, *Linum Lewisii*, originally collected by the famous Lewis and Clark expedition. A species of *Townsendia*, perhaps *T. exscapa*, grew all over the slope, its pale lavender daisies, seated on stout three-inch stems, making an unforgettable picture.

Several plant forays into the montane zone below Beartooth Lodge gave us the pleasure of finding such species as *Aquilegia flavescens*, *Mertensia Bakeri*, *M. ciliata*, *Tellima parviflora*, *Balsamorhiza sagittata*, and last but not least, the hairy *Clematis hirsutissima*. This species, while not strictly a rock plant, nevertheless has a rare charm all its own, and the intensely hairy foliage and neat growth habit, topped with large dull purple bells, might make it a choice plant for just the right sunny rock garden.

On rocky ledges nearby, a dense growth of *Saxifraga bronchialis* showed delightful sprays of pretty white flowers, each petal marked with a bright orange dot. Our experience with *S. bronchialis* in the field indicates that it seems to prefer drier situations than the majority of its brethren, and would perhaps solve the problem of filling in some of the hotter portions of the saxifrage specialist's rock garden. Companion plants found here were *Mahonia repens*, *Erysimum asperum*, and *Myosotis alpestris*, also called alpine forget-not, but not to be confused with that true alpine, *Eritrichium argenteum*.

In rich shaded woods, two other botanical prizes were hunted out, the western *Clematis columbiana*, climbing over the surrounding vegetation with its graceful, pale lavender, twisting bells, and the Venus slipper orchid, *Calypso borealis*. *Calypso* is a rarity of rarities among our eastern orchids, being restricted to perhaps a dozen localities in northern Vermont and Maine. In the Rockies it becomes exceedingly plentiful, and we were much impressed with our first glimpse of this quaint little slipper. A shaded bank near the stand of *Calypso* yielded a single specimen of the golden smoke, *Corydalis aurea*, a plant which did not appear plentiful anywhere in the region.

In order to compare the mountain flora with some of the typical plains-loving species, we made a short trip into Sunlight Basin, along the forks of the Yellowstone River. By a dusty road leading to Cody, Wyoming, many plants of the extremely floriferous *Penstemon erianthus* appeared on the hottest, driest roadcut imaginable. The masses of pale lavender blooms testified plainly that this species likes ample sunshine and sharp drainage. Two other *Penstemons* in the neighborhood were the dingy-white-flowered *P. deustus*, not worthy of space, and *P. procerus* with tight whorls of dull purple blossoms.

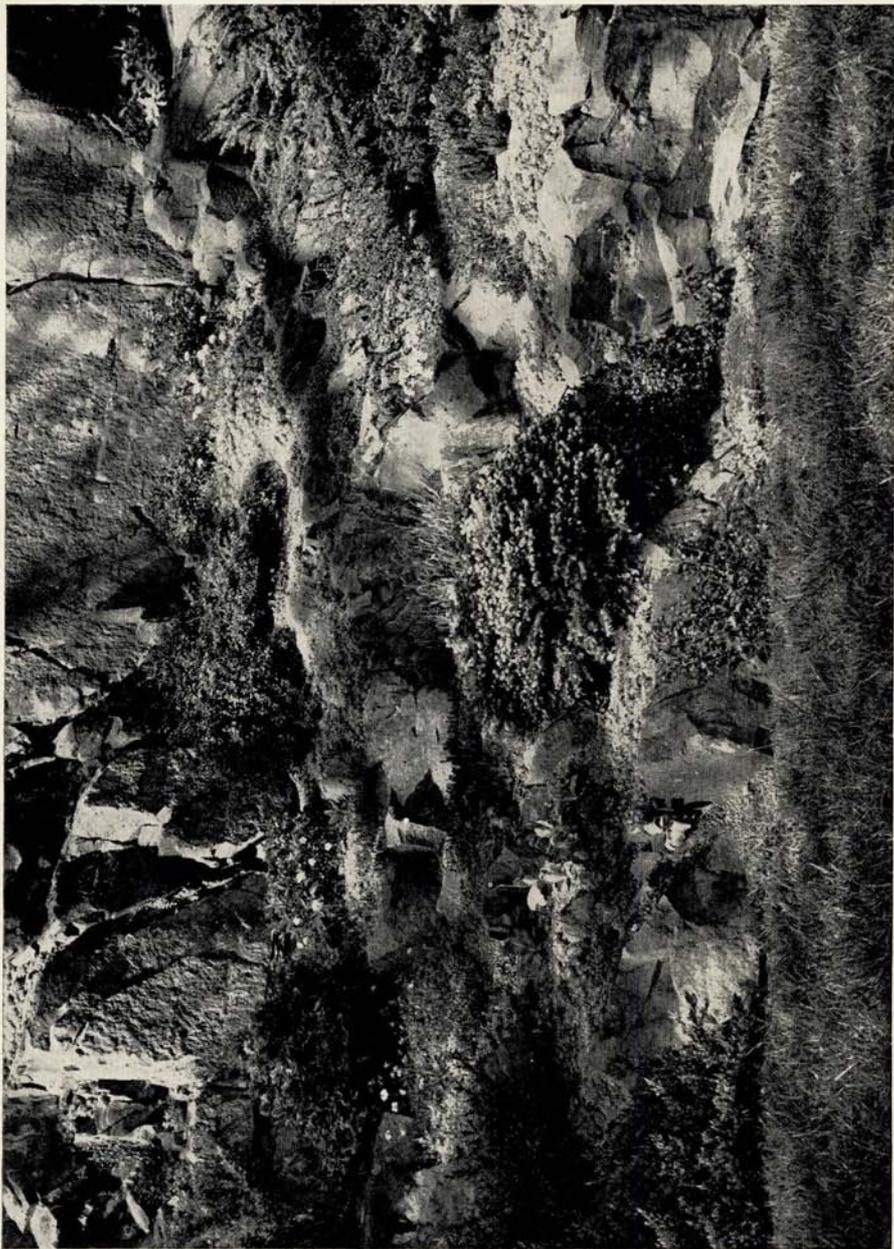


Photo by Gotscho-Schlisner
Favorite Corner in the rock gardens of Leonard J. Buck, Allwood, Far Hills, New Jersey.

The sulphur buckweat, *Eriogonum umbellatum* was well represented, as were the other typical plains plants, *Sedum stoloniferum*, *Heuchera glabella*, *Senecio canus*, *Eriophyllum integrifolium*, *Zygadenus elegans*, and *Z. venosus*. Special mention must be made of one which appears to have all the desirable features of a first rate rock garden plant, the species listed in botanical manuals under the name of *Stenotus caespitosus*. *Stenotus* has rich yellow daisies on four- or five-inch stems which emerge from a tight clump of grasslike leaves. Nearly all plants of it showed a decided appreciation for sun-baked ledges wherever a foothold could be obtained. Because it seems to demand a place in the rock garden, every effort should be made to introduce this little beauty to the "wanted" list.

With great reluctance, we were forced to leave this wonderful country and return to the clamor and roar of the metropolitan areas, but not without a promise to return one day and seek out more of the botanical treasure which is found on every mountain and at every turn in this amazingly rich alpine country.

MY FAVORITE CORNER

LEONARD J. BUCK, FAR HILLS, N. J.

THERE are many corners at "Allwood," each with its own particular interest and charm, but fortunately "my favorite corner" is the last corner—an interesting climax to a garden that has given the owner, and seemingly its visitors, many pleasant hours.

The garden consists of a series of rock gardens in a woods connected with grass or woodland soil paths varying in width up to twenty feet. The last outcropping of rock is called "Big Rock," which was eroded by a glacial river so as to form a right angle, and it is the corner thus formed that is "my favorite corner." The length of the total face of this rock is about 150 feet and its height about 30 feet.

Mr. Zenon Schreiber of Paramus, New Jersey, the well-known landscape architect, has created at this corner a garden within a garden, an integral part of the whole but a separate and distinct garden within itself when observed closely. It is especially appealing because it covers an area of only 18 feet long and 5½ feet high on a rock face, yet contains fifty species of plants with a nice balance between dwarf evergreens and deciduous plants.

Its constituent parts are not apparent, which speaks well for its excellent design. It is a garden that could be reduced or enlarged to any size and still retain its charm.

Most beginners are tempted to collect the maximum number of species of plants but give insufficient attention to the design of the garden as a whole, while "my favorite corner" is an example of what can be done in a very small area with a sufficient number of species of plants to keep the average gardener's interest and yet attain a beautiful picture.

This article is written in the hope that this corner might encourage new home owners to leave the rock outcropping on their properties, since, regardless of how small or large they are, the landscaping of these outcrops will offer enormous opportunity to use many kinds of plants, yet create a picture of greater beauty and interest than the more common annual or perennial herbaceous garden and, surprisingly enough, with a reduced cost of maintenance.

The plants in this particular corner are as follows:

- | | |
|---|---|
| DWARF EVERGREEN | 15. <i>Gentiana septemfida</i> |
| 1. <i>Chamaecyparis obtusa</i> var.
<i>nana compacta</i> | 16. <i>Globularia cordifolia</i> var. <i>alba</i> |
| 2. <i>Cotoneaster congesta</i> | 17. <i>Globularia repens</i> |
| 3. <i>Ilex crenata</i> var. <i>Helleri</i> | 18. <i>Mitchella repens</i> |
| 4. <i>Juniperus communis</i> var.
<i>Hornibrooki</i> | 19. <i>Muehlenbeckia axillaris</i> |
| 5. <i>Juniperus horizontalis</i> var.
<i>glomerata</i> | 20. <i>Nierembergia rivularis</i> |
| 6. <i>Juniperus procumbens</i> | 21. <i>Phlox nivalis</i> var. <i>camla</i> |
| 7. <i>Picea Abies</i> var. <i>nidiformis</i> | 22. <i>Potentilla alchemilloides</i> |
| 8. <i>Rhododendron racemosum</i> | 23. <i>Primula Auricula</i> |
| 9. <i>Tsuga Sieboldii</i> | 24. <i>Primula Auricula</i>
(Giant Hybrid) |
| DECIDUOUS | 25. <i>Primula Sieboldii</i> var.
"Purity" |
| 1. <i>Androsace sarmentosa</i> | 26. <i>Rosa</i> "Oakington Ruby" |
| 2. <i>Arctostaphylos Uva-ursi</i> | 27. <i>Sagina glabra</i> |
| 3. <i>Calluna vulgaris</i> var. <i>Foxii nana</i> | 28. <i>Saxifraga Albertii</i> |
| 4. <i>Calluna vulgaris</i> var.
<i>nana compacta</i> | 29. <i>Saxifraga cartilaginea</i> |
| 5. <i>Campanula Poscharskyana</i> var.
<i>lilacina</i> | 30. <i>Saxifraga cochlearis</i> var.
<i>longifolia</i> |
| 6. <i>Campanula rotundifolia</i> | 31. <i>Saxifraga Engleri</i> |
| 7. <i>Claytonia virginica</i> | 32. <i>Saxifraga lingulata</i> var. <i>Albertii</i> |
| 8. <i>Cotula squalida</i> | 33. <i>Sedum album</i> var. <i>minor</i> |
| 9. <i>Dryas octopetala</i> | 34. <i>Sedum caucolicum</i> |
| 10. <i>Dryas Suendermannii</i> | 35. <i>Sedum sexangulare</i> |
| 11. <i>Erodium chamaedryoides</i> var.
<i>roseum</i> | 36. <i>Sedum Sieboldii</i> |
| 12. <i>Genista horrida</i> | 37. <i>Sempervivum admontensis</i> |
| 13. <i>Genista pilosa</i> | 38. <i>Sempervivum arenarium</i> |
| 14. <i>Genista sagittalis</i> | 39. <i>Sempervivum soboliferum</i> |
| | 40. <i>Spiraea crispifolia</i> |
| | 41. <i>Veronica Trehanii</i> |

Consequently, consisting as it does of evergreens and deciduous plants, "my favorite corner" remains attractive during all the seasons of the year, a source of constant enjoyment.

OTHER FAVORITE CORNERS

Members are reminded that we should like to publish photographs and descriptions of their favorite corners, which need not be as outstanding as this one of Mr. Buck's. Just as a 2-inch miniature painting may be as worthy a work of art as a 40-foot canvas, so the small rock garden has as much of a place in our pages as the large one. And if it is your favorite, let others judge its artistic merit and profit by the thought you have put into it.

Any good clear negative will make a suitable print, which should if possible be a glossy enlargement. If you care to send us the negative, we can do the rest. If you have no photograph and intend to take one, remember that the spot should first be weeded and tidied up. There is something about a camera that makes weeds stand out, while every twig and straw assumes mammoth proportions, spoiling the appearance.

ANOTHER YEAR, A NEW ENTHUSIASM

DORETTA KLABER, QUAKERTOWN, PA.

ABOUT a year ago I reviewed the crop of new (to me) flowers in my garden. Another year, another crop. Though annuals have been pretty much taboo in this garden, last spring a friend gave me seeds of blue-eyed Mary, *Collinsia verna*, saying they would germinate, live over the winter, and bloom this spring. They did, and for once the common name seems most appropriate. Their 6-inch clusters of blue and white flowers delighted all who saw them. I'm leaving them to seed around all they want to!

Townsendia sericea made 1-inch clusters of gray "grass" hardly visible against the gray stone chips of the top dressing. This spring lovely pink daisies bloomed down on the ground. The foliage isn't increasing much, but looks as though it meant to live another year.

Lewisia rediviva is finally at home here, and has been blooming with its pink "waterlilies" in many different positions.

Gentiana sino-ornata amazed me last fall with its enormous trumpets emitted from insignificant-looking foliage. It was outstanding for size, color and long season of bloom. This spring *G. alpina* put on its show—one huge trumpet. As someone said, it looked just like the colored picture post cards. Unbelievable. *G. acaulis*, *angustifolia*, *verna* and others are tantalizingly slow, and haven't bloomed as yet.

Edraianthus dalmaticus came through the winter with flying colors, and had large trumpets from pale lavender to deep purple.

Lavandula nana compacta hasn't bloomed yet, but the round, 4- to 6-inch domes came through the winter with no damage at all, which can hardly be said of the tall varieties, and its foliage is extra fragrant. A delight even before blossoming.

Primula saxatilis went so very dead in the fall that I was worried, but the plants were up in force this spring in their varying shades of cool and sometimes hard pink. They looked well by themselves or with white to pink tones of polyanthus and vulgaris. The Auriculas are growing at last on the edge of the woods. Half shade seems to be their need here. *Primula dariatica* and *frondosa*, if true to name, were so much like what I've had as *farinosa* that it was difficult to tell them apart. Shall try seed from a different source and see if there is more variation. Other small fry were *P. involucrata*, *yargonensis*, and *Wardii*. Here again for garden purposes there was very little difference. All had small rounded glossy foliage narrowing to a short stem (the whole thing an inch or two high) then 6-inch stalks carrying clusters of fragrant flowers, *involucrata* white and the other two flushed lavender or pink. *P. aurantiaca* has pleasant rather small orangey flowers, the whole plant 6 to 8 inches high (its first year; will probably be larger next season). The *aurantiaca* hybrids I found breathtaking, with tiers of gorgeous colored flowers, orange, tangerine, pink, yellow; larger foliage and taller, more showy plants.

Myosotis rupicola didn't quite live up to Farrer's rhapsodies, but was dwarf and a lovely color, and if it proves to be a true perennial, will be a great improvement over *M. alpina*. I shouldn't speak disparagingly of the latter, however, for it seeded itself prolifically, and the little dooryard garden was a patch of heaven even on dull days.

Digitalis ambigua gave good soft yellow late color in the back of a shady bed last year. About 15 inches high.

Leontopodium alpinum is blooming, and the only thing one can say is that it is fun to show people what the edelweiss looks like.

Penstemon Flathead Lake, especially the dwarf one, has been giving lovely coral accents in the garden. Too big of course for any but large rock gardens. Am still trying out all sorts of Penstemons.

Polemonium pulchellum and *Haydeni* were both pets, dwarf, with their pleasant blue flowers and lovely foliage.

The Alaskan *Corydalis* has a long season of bloom, giving the effect of a fine red and yellow columbine, but is proving biennial. I hope its many seeds are finding homes for themselves, as it is worth growing for the foliage alone.

Oenothera Fremontii has neat foliage about 5 inches high, but looks just a bit weedy as its big yellow flowers spray around. However, I know I will be grateful for its long persistent blooming, as I was last year.

The hybrids of *Geranium sanguineum* are lovely. Alpenglow and Walney have tight flat foliage and flowers in shades of crimson. The variety lancastriense I at last have true, tight fine foliage and softest of pink flowers. My seedling is in the wall and clings to the stones. Up till now I have seen it only in others' gardens, and was always disappointed in the large, rather weedy plants they had. There is nothing weedy about this.

One other plant. My daughter was in Switzerland last summer, and picked and pressed some alpine for me. I noticed some seeds forming on a few plants, saved and planted them. Now I have a very cute *Dianthus*; short stiff "grass," then an explosion of six-inch stems with clusters of bright pinks at the end, a little larger than deltoideis flowers. I have never seen one just like it.

Have the most wonderful seedlings coming up, and next year hope to report on rare Primulas and gentians, Cortusas, Omphalogrammas, alpine rose, and so on. Am beginning to scan the catalogs for new seeds. How this rock gardening carries one on . . . and on . . . and on!

MORE ABOUT GROWING THE MOCCASIN FLOWER

G. G. NEARING, RAMSEY, N. J.

THERE has long existed a general conviction that the moccasin flower, *Cypripedium acaule*, cannot be successfully grown under cultivation. Repeated attempts to transplant it often either failed or more usually seemed at first to prosper, then gradually the plants lost vigor and disappeared.

In the Bulletin for November-December 1948, E. L. Totten gives an accurate account of the conditions under which the moccasin flower grows wild in Bergen County, N. J., and draws a tentative conclusion that its prevalence there is in some way associated with the native gray birch, *Betula populifolia*.

Locally this opinion would seem justified, though frequently thrifty stands are found also under mixed oak, white pine and other trees in the complete absence of gray birch, as Mr. Totten also notes. Elsewhere it frequents the shaded borders of Sphagnum bogs.

It is noteworthy that the gray birch commonly appears on light, lean soils with a thin topsoil layer, often in nearly pure sand or gravel, seldom doing well when the soil lies rich and deep. Since *Cypripedium acaule* does so well under the birches, it may thrive there simply because its soil preference happens to agree with that of the birch tree, not because of anything done to the soil by the birch. Mr. Totten came to the very verge of the same conclusion when he told of a stand on top of a pile of gravel in an abandoned sand pit. There were birches in the gravel too.

There is also the matter of lighting. Birches make a thin shade because the leaves are small and held at such an angle that much sunlight filters through. The moccasin flower carries its leaves fully active and deep green until late autumn, showing that unlike many woodland plants which do most of their growing under the spring sun before the trees leaf out, it aims to function throughout the season. In fact at higher elevations this puzzling orchid may forsake the forest entirely, and venture out in the mossy pockets between bare rocks, or among the tangled blueberries. On the other hand we may find it where the white pines distend their canopy of eternal shadow, thriving and blooming there also, or in densest thickets of hemlock where little direct sunlight ever falls. Those who look to a light-shade balance as the key to cultivation, find therefore only confusion from the plant's behavior in nature.



Cypripedium acaule after four years under cultivation, showing flowers, seed capsule and the shoots of newly developing crowns.

It has lately become the fashion to attribute to almost any difficult horticultural subject, some unknown alliance with a nameless fungus. Many such symbiotic relations are known to exist—are in fact extremely common, and in some cases the fungus has been named and studied. Whether the moccasin flower depends upon such help for its subsistence is doubtful, and in any case the importance of such knowledge for horticultural purposes is easily exaggerated. Plant and root fungus form, for practical purposes, one entity. It is only necessary to take up an intact root system including the fungus, and to set it in conditions so similar to those in which it was found, that both plant and fungus will continue to grow. There is no need of isolating or naming the fungus, nor any occasion to despair.

Another possible factor involved is the time of transplanting. We may assume that most attempts to grow the moccasin flower have been made either by moving it from the nearby woods when in full bloom, or ordering roots from a collector in some distant part of the country. Transplanting anything in flower is usually ill advised. The ideal time for moving *Cypripedium acaule* is probably early April, when the new and easily recognizable shoots first push through the soil. Later transplanting is no doubt a strain on the constitution of the plant, while the delays of distant shipment, often with inadequate packing, might account for many losses.

The fact is however that failure commonly occurs not in the first season, but in the second or third. The leaves die off in the fall, and when spring arrives, either there is no sign of life, or the new shoot arises suspiciously feeble and flowerless. Some plants last through a second or third season, only to pine away progressively, and eventually vanish.

This brief review of possible difficulties leads us inevitably back to a consideration of the soil. Confronted with a horticultural problem, man, being an animal, naturally thinks in terms of food. He thinks the plant must require some food which is not being supplied. Even a scientist easily forgets that plants make their own food out of water and air, needing only small quantities of other materials to assist in the process. A tropical orchid, poised high on a branch, gets no nourishment but what the rains bring, yet supports a much larger mass of foliage and flower than does *Cypripedium acaule*.



The moccasin flower long established in a gravel bed in the garden of Walter F. Winkler, Ramsey, New Jersey.

Dousing the soil with this and that, instead of helping the plant, may actually hinder its development, give it a sort of vegetative indigestion, as it were. Yet the horticultural experimenter is fairly certain to meet each challenge with a larger supply of "food" which really isn't food to the plant at all, but a sort of tonic or vitamin. Too much vitamin will kill plants, as has been shown by the use of growth-promoting substances for killing weeds.

No dryad, flitting from tree to tree, puts fertilizer on the moccasin flower in its native hills. Why then should we give it the fattened soil loaded with those things which make corn and cabbage grow at ten times their natural rate, and expect the orchid to say thank you. It doesn't want to grow fast nor fat. It wants to be just what you see and admire in the woods—itsself, and for that it needs only the "food" available to it in the woods.

My first effort to grow this magnificent flower was with plants which I dug in April with nothing but a pocket knife, and brought home wrapped in leaves, for lack of anything better to dig or pack with when the impulse overtook me. Three years later they were thriving and flowering. "But," said Dr. Wherry when they were shown to him, "you have put them in natural conditions." And so I had, and so must you do if you would succeed with *Cypripedium acaule*.

They had been placed at the top of a rather steep bank of unprepared, dryish loam, under large Norway spruces, and mulched with the fallen needles which covered the ground, and as more needles fell, they were left undisturbed from that time on. Nearby *Pyxidantha barbulate* from the pine barrens, another supposedly difficult subject and another first attempt, romped through those same spruce needles year after year. Though I have no special insight into the reasons for these two successful plantings, I believe the two most important factors were, first that the soil was lean, second that the spruce needles were never disturbed. For the benefit of the pyxie, the hose was used freely.

For the reasons outlined in a previous paragraph, the rarer and more difficult a plant, the more certain it is to be transplanted into a deeply spaded bed of rich loam overloaded with fertilizer. Virtually all writers on horticulture recommend it. Zinnias revel in it. Is it possible that this time-honored formula spells death to the moccasin flower? I suspect that it does.

About five or six years ago, Walter F. Winkler of Ramsey, N. J., was following this customary practice with the moccasin flower when, having a few plants left over, he heeled them in a mound of raw subsoil gravel and forgot them. The plants he had carefully set in the deep rich loam soon pointed their moccasins to the happy hunting ground, while those heeled in on the gravel grew like the proverbial and omnipresent weed.

A less observant gardener might have commented on the perverseness of the species and continued himself perversely to inter the hapless roots in deep rich soil. But Mr. Winkler, putting two and two together, built the bed here illustrated, raised a little more than a foot above the surrounding ground level. The soil is subsoil gravel, with just a thin surfacing of pure leafmold, the mulch needles of white pine, though the shade overhead is furnished by large oaks. There are no birches near.

Here after four years *Cypripedium acaule* not only thrives and flowers freely, but the crowns are splitting two for one, while little new shoots are now appearing, either volunteer seedlings, or more probably side-shoots from the old roots. Mr. Winkler has built two more beds modeled on his first, and these are equally successful to date. He is not sure whether any of the plants in the first have died, but is certain that it now contains more than he transplanted into it.

Now surely Mr. Totten's plants on top of the gravel heap are explained. They don't want deep rich soil. They prefer gravel or sand or an unenriched loam with just a little leafmold on top. Mr. Winkler's experience agrees so closely with my own, that I have reached a conclusion which may astonish or even shock better horticulturists than myself. I believe *Cypripedium acaule* is rather easy to cultivate, once you learn it is not lettuce.

Attempts to start the moccasin flower from seed appear never to have met with success. Millions of seeds are produced, and some of these must certainly germinate in the natural surroundings. New crowns from underground shoots could account for the spreading of closely populated stands, but would not explain the continued appearance of isolated plants. Efforts to obtain seedlings even by the test-tube methods of commercial orchid growers, fail. Perhaps "even" is the wrong word. Perhaps if seed were scattered on a bed prepared as Mr. Winkler prepares his, nature might rise to the occasion.

Other species of *Cypripedium* present problems of their own which require entirely different answers. The chief difficulty with the yellow lady's slipper has nothing to do with growing it, which is rather easy, whether the small-flowered bog form or the larger upland one, but concerns its name, last year *C. parviflorum*, last week *C. pubescens*, this week *C. Calceolus*. Actually the changes are not quite so rapid, but only seem so. It really takes years to grind out these names, and immense labor of silly minds.

More serious is the plight of the showy lady's slipper, *Cypripedium reginae*, now all but extinct at the hands of murderous collectors. Its great beauty and the unscrupulousness of those who offer it for sale have combined with ignorance of its needs to destroy it. Let us agree that it cannot be cultivated, and let us boycott those who set a price on its lovely head.

TREASURE UNAWARES

CLARICE NYE, MEDFORD, OREGON

WE WERE NOT looking for *Lewisia* that day when we went exploring on Iron Creek Mountain. It was the summer of 1890 and we had never heard of such a flower. The woods were full of surprises, for we were but lately from the plains states. All mosses, ferns, and new blossoms were wonderful, but the little star shaped succulent at once caught our eye when we saw it on a cliff among *Gormania rhodiola* and *Sedum spathulifolium*. It was on the north side, and it is there one usually finds all of this class of *Lewisia*. We were pretty well toward the top of the ridge, for they are seldom far down from the summit. I succeeded in prying the rock away from the roots and got it out in good shape. Wrapped in some damp moss it reached home in growing condition. I made a tiny rock garden for it on the north side of the house and when it bloomed the next summer it was the wonder of all visitors to the garden. They pronounced it by far the nicest hen and chickens they had ever seen. It was a clear old rose without any light striping, and the leaves were slightly ruffled, placing it in the *Howellii* group.

It was many years later that my husband found a plant new to him and brought it home to me. It was *Lewisia Finchii* and I could not rest until I had made the six-mile trip from our home to see it growing on its native cliffs facing the north as usual. This variety of *Lewisia Cotyledon* was first discovered by Mrs. Finch of Kerby in Josephine County. She found it in the



Yellow lady's slipper, *Cypripedium parviflorum* (*C. Calceolus*) in the garden of Walter F. Winkler.

Siskiyou Mountains back of Takilma. This is a wonderful region. It is the home of many beautiful rarities.

It was some years later that my good friends, Fred Borsch and J. G. Bacher, came down from Portland to see our wild flowers. We made a trip out onto the mountain. On the way Mr. Bacher entertained us with a very interesting account of his experiences as a guide in the Alps and told us of the grand scenery and beautiful flowers. Reaching the top we passed around a clump of evergreens and came to a great out-cropping of rock decked in Lewisias in full bloom. We all stood spellbound for a moment. Then Mr. Bacher removed his hat and bowing toward the beautiful natural rock garden he paid it a tribute scarcely to be surpassed.

"This is worth coming so far to see," he said. "Switzerland has nothing more beautiful."

Later, while I was spreading the lunch by the ice-cold spring, Mr. Borsch came strolling up beside the brook that was hastening to leap over the cliff below. I asked where his friend was.

"Oh, he's down there hanging over the cliff, trying to get a picture of those Lewisias," he replied.

Growing Lewisias from seed is quite easy if their requirements are met. They need the very best of drainage, acid soil, some nice decomposed evergreen needles and rock chips. I like to plant the seed, chaff and all, or to mulch with some fine straw. The seedlings are fat little fellows and the frost lifts them out, so they must be carefully protected until the roots are large enough to hold. They need very little watering and, no sprinkling, please. Some seeds come in a short time and some next year.

In selecting a permanent home for your Lewisias of this type, the ever-green rosette, it is best to give an east or northern exposure. If you do not have

that, and I do not in my home garden, provide light shade during the heat of the day. Place the roots in a layer or pocket of acid soil with some rock chips, and under a large rock with plenty of drainage. Place the gravel or rock chips around the caudex under the leaves to prevent damping off. This is the worst enemy of *Lewisia*s. I find it best to use no fertilizer but give plenty of acid leafmold and fine broken rock to simulate their natural habitat.

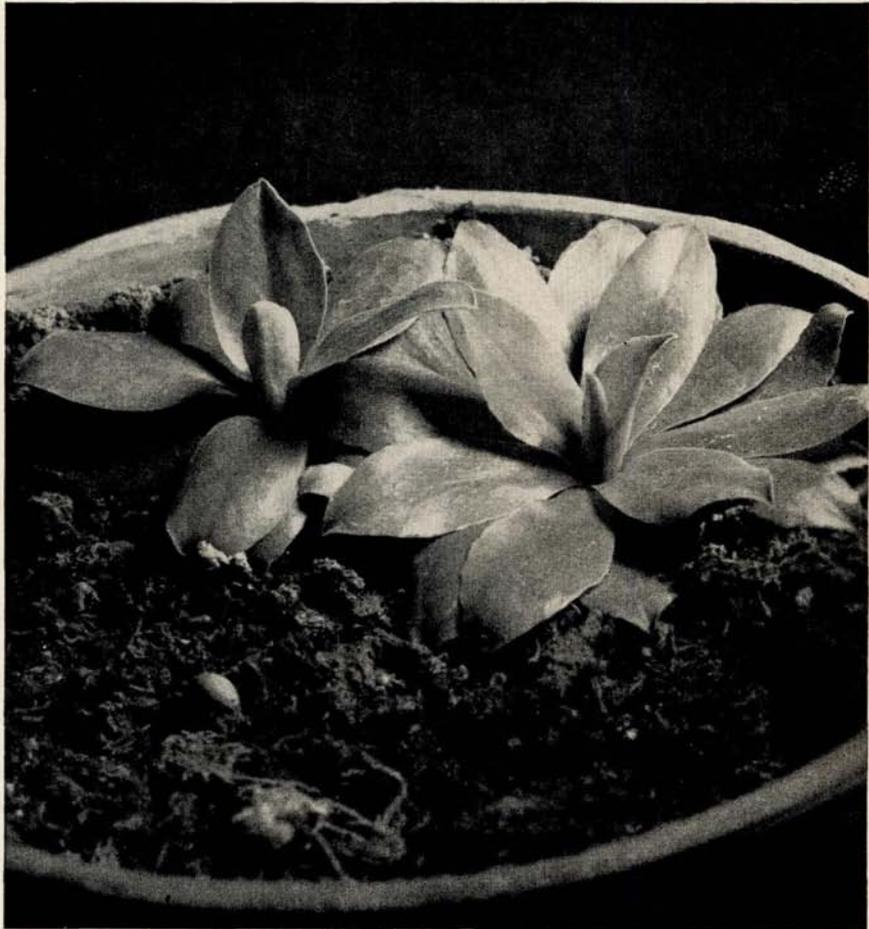


Photo by Robert M. Senior

Primula Clusiana established an entire year in pure Sphagnum.

SEEDS PLANTED IN SPHAGNUM

ROBERT M. SENIOR, CINCINNATI, OHIO

A COUPLE of years ago I related in the Bulletin my experience with a plant called *Phlox mesoleuca*, grown in a pot of pure Sphagnum, with about an inch of small stones at the bottom for drainage purposes. After keeping the plant for about two years, and then removing it from the pot, imagine our astonishment at finding that the roots were fully two feet long.

For years many people have experimented with plants grown in Sphagnum. I imagine however that not many of our readers have attempted to use this medium for growing plants from seed. Our experience here may stimulate others to try this method.

Usually we take rather low pots, such as are used for raising bulbs, and as mentioned above, place small stones at the bottom. Then we shred the Sphagnum, using a coarse screen, until we have enough to fill the pot. We then press it down firmly in the pot, water it thoroughly, sow the seeds on the surface, and cover them with a very thin layer of Sphagnum.

This year, in order to have a basis for comparison, we also planted about an equal number of seeds both in pots and in flats, using a light mixture of sterilized loam, peat moss and sand, and covering the surface with a thin layer of small pebbles.

The seeds we planted would not be considered easy to grow, at least not in this climate. They include *Campanula Allionii*, *C. saxifraga*, *C. Wilkinsiana*, *C. Piperi*, *Cyananthus integer*, *Adenophora Farreri*, and *Primula glutinosa*. They were planted about February fifteenth, and kept in a coldframe. By April twentieth all of them in the Sphagnum had sprouted, and with the exception of *Campanula saxifraga*, none of them had germinated in the compost. In fact the seedlings in the Sphagnum were so thick that we removed a number of plants to other Sphagnum pots. The roots were so tiny and the plants so small that we had to extract them with great care. They were dibbled into fresh Sphagnum, which was then pressed against the roots. Two weeks later, every one of these transplanted seedlings was living.

We have a small alpine house, and in mid-summer the temperature often rises above 100° Fahrenheit: and yet two or three plants that we raised in Sphagnum last year survived this heat without a sign of wilting. The picture, taken on the first of May of this year, shows a plant of *Primula Clusiana* inserted in Sphagnum in the spring of 1951. We had several others that we had potted in light soil; all of them perished during the summer.

Here in southwestern Ohio a plant such as *Campanula Piperi* probably could not survive outdoors in the rock garden except possibly in a scree, but there is a certain satisfaction in raising a difficult plant in Sphagnum, and seeing it bloom. Of course it must be remembered that it is growing in a sterile medium, and so, from time to time, it must receive a small quantity of liquid fertilizer.

One word of caution. If you grow plants as described above, then beware of slugs and sowbugs. You will have to place your pots beyond their reach. Our pots are deposited in a good sized tight wooden box, with sides as tall as the pots themselves. In order to keep the pots reasonably cool, it might be desirable to fill the intervening spaces with peat moss.

PHLOX ADSURGENS

LEONARD J. BUCK, FAR HILLS, N. J.

IT HAS BEEN the intriguing desire of many rock plant enthusiasts to grow *Phlox adsurgens* in the Eastern United States. Usually, however, such efforts have not been successful. There have been exceptions, such as in Mr. Harlow's interesting garden in Pennsylvania, and a number of people have kept this plant for several years.

In order to determine if there was a mineral content in the soil which made its growth favorable in the West and not in the East, some plants of *Phlox adsurgens*, with the soil attached to the roots, through the cooperation of Mr. Marcel Le Piniec of Jacksonville, Oregon, were sent to the U. S. Department of Interior, U. S. Geological Survey, in Colorado. Chemical analysis of the soil, as well as a spectrographic examination of the plants, showed no metallic elements to be present in any unusual amounts with the possible exception of chromium.

The area from which the plants came was then investigated and Dr. Francis G. Wells reports that the plants are growing in a geological environment that gives no indication whatever of any unusual metallic content. He is quite definite that there is no possibility of a metalliferous deposit occurring in the area from which the plants were obtained.

It would appear that the success or failure of growing this plant in the East will not be affected by the addition of any metallic salts to the soil. Therefore, another solution for its successful cultivation must be found.

REPORT OF THE ANNUAL MEETING

The 18th annual meeting of the American Rock Garden Society was held Saturday, May 17th, 1952, as guests of the New York Botanical Garden at Bronx Park. At 10:30 A.M. about thirty members and guests enjoyed a conducted tour of the Garden on the picturesque tractor train, enabling all to see many spots in the garden they had never visited before, and the wonderful rock formations, old trees, the rose garden and plantings of azaleas in full bloom, among other attractions, brought forth many expressions of admiration and appreciation. The tour ended at the Thompson Memorial Rock Garden where over an hour was spent inspecting the many hundreds of rock plants, shrubs, small and large evergreens, and trees in ideal settings for each, with several people present to answer the many questions about names, culture, etc. Our president proved an inexhaustible mine of information and he had little time to look up old treasures of interest to himself.

Shortly after noon the guests gathered at attractively laid tables in the members' room, adjoining the library on the top floor of the Administration Building to enjoy the lunches they brought and the tea and coffee served by courtesy of the Garden. This social gathering was followed by the Annual Business Meeting at 1:30 P.M., President Harold Epstein in the chair, who welcomed those present and thanked Mrs. Hansell and Mr. Johnson for the arrangements for the day, particularly the ride in the train which enabled us to cover many spots not seen by most people. He also announced there were many interesting plants to be seen in the greenhouses after this meeting.

The minutes of the last annual meeting were read and approved with corrections, stating that all visitors from America to the conference in London in 1951 paid their own expenses. Report of financial secretary, Mrs. J. B. Johnson, was given by Mrs. Thomas, to the effect that all bills for dues with enclosures had been sent out the latter part of April and dues were beginning to come in. Mrs. Hansell asked that all dues be sent directly to Mrs. Johnson, whose address appears on the bills, instead of to her or the president, resulting in loss of time and expense of transmission to the proper person.

Mrs. Hansell, corresponding secretary, made her report. She said the end of April saw everything on her desk pertaining to the Society completely cleared

up. Since then, due to the pressure of other duties, much correspondence has accumulated, including letters from abroad regarding the society and membership therein, how to become a member from all parts of this country, and many other matters. This, however, will shortly be disposed of, but it really takes a great deal of time.

The treasurer's report for 12 months from April 30, 1951, showed balance in bank at that date \$878.59; dues, contributions to Bulletin Fund Seed Exchange, etc. \$2245.35. Expenses for Bulletin \$965.89, less advertising receipts and sale of back issues of \$209.56, making net expense of Bulletin \$756.33. Expenses for conducting the society of telephone, postage, printing, etc. \$219.28, making total expense of the year \$975.61, leaving a balance in bank March 31, 1952, of \$2148.33, which is about the largest balance since the organization of the society.

The report of Miss Madeleine Harding, Seed Exchange, was read by Mrs. Hansell. It has been a very active and successful season with 589 seed packets received and 1100 packets distributed. The deadline of December 1st for seed donations proved a good idea for it escaped the season of Christmas mails and helped advance the time of printing the seed lists. However, a dozen more donors sent in a hundred or more packets of seed later, which were distributed for the most part. From January through March the Director could have used six pairs of hands, checking seed packets, dividing, sealing, weighing and stamping. A "Seeds Wanted" list in Spring or Summer Bulletin should give an indication of special desires for seeds. The interest in native American plants is very evident; our foreign members, especially, are pleased to have even eight or ten seeds. The expenses of Seed Exchange were \$15.02 and receipts were \$26.34, leaving a balance on hand of \$11.32. It was stressed that it was very desirable that the seed packets be marked very legibly with ink in printed letters, that there be no mistake in names of varieties. The report is placed in file, with commendation for a difficult job well done by Miss Harding.

A letter from Mrs. Stewart of California Group extended greetings to the annual meeting, and Mrs. Houghton sent regrets she was unable to be present.

Mrs. Eunice V. Fisher of the Central Group reported membership is too scattered to hold meetings, but they have two Round Robins and are about to start a third. Report filed.

Mrs. Harry Haywood of the New England Group reported at a recent meeting of the Board of Directors, Mr. Heimlich was planning trips to visit gardens. At the annual meeting this week Mr. Phillip C. Keith, Shore Road, Cape Elizabeth, Me., was elected new chairman. There are about 40 members.

The president called attention to the fact that all the work of chairmen, committees and officers of the society is given freely without any compensation or reward of any kind and he hopes the members will try to reduce their work as far as possible by sending communications directly to the proper person and get checks in promptly so bookkeeping is kept to a minimum and not spread over 12 months. He also stated that by action of the Board of Directors at the last business meeting it was decided to make the Bulletin a quarterly instead of issuing it bi-monthly as heretofore, for financial reasons and to get a more representative Bulletin which will be more valuable to the members. Mr. Nearing will continue as editor of the Bulletin and will make his report.

Mr. Nearing reported that the Bulletin usually speaks well for itself, but there has been much to contend with this year; we have now gotten a new printer and are making several changes. There will really be an increase in the services of the Bulletin to the members; there will be more pages per year than

before and they will be better looking and more easily readable. Of course the problem is to get material to fill it. We have had to use heroic measures to get some heretofore, and I make a real plea for material to be sent in by everyone. Also, please send in your "Wish List" for seeds at once. We already have a short list of seeds desired, to appear in the next issue, but all should think about what they would like to have so it may be printed in time for those who have the seeds to save them before clipping off the flower heads. Mr. Epstein said he wished to stress the need for manuscripts as it is always with us. We want a well balanced publication and need many sorts of articles, written by the new gardener as well as the experienced gardener and writer. Our own membership should be the principal source of material.

Next in order was the election of new officers and Mrs. Hansell took the chair as chairman of the nominating committee. She stated that at the March meeting of the Board of Directors Mr. Epstein said he would like to be relieved as president as heavy duties now in his business made it difficult for him to give so much time to the work of the Society. After the committee really tried very hard to relieve him of his duties and were unsuccessful in getting someone to fill the office, Mr. Epstein was prevailed upon at the last minute to continue as president. The following slate is presented by the nominating committee, consisting of Mrs. Houghton, Mr. VanMelle and Mrs. Hansell, chairman:

President for 2 years: Harold Epstein.

Vice-Presidents: Leonard J. Buck, Mrs. Harry Haywood, Miss Elizabeth Gregory Hill, Arthur R. Virgin, Brian O. Mulligan and Mrs. Coulter Stewart.

Recording Secretary: Mrs. Ida A. Thomas.

Corresponding Secretary: Mrs. Dorothy Ebel Hansell.

Financial Secretary: Mrs. J. B. Johnson.

Treasurer: Alex D. Reid.

Directors: Mrs. W. D. Blair, Mrs. Mortimer M. Fox, Mrs. J. M. Hodson, Mrs. C. S. Houghton, E. L. Totten.

Seed Director: Bernard Harkness, Highland Park Herbarium, Rochester, N. Y.

Editor of Bulletin: G. G. Nearing, Ramsey, N. J.

Nominations from the floor were asked for, and, hearing none, motion that the recording secretary be instructed to cast the ballot as read was made by Dr. Wherry, seconded by Mrs. Wilson, and carried. The ballot was so cast and the persons named were declared elected.

Mr. Epstein thanked the nominating committee and the members for the honor of being elected president again. The work is heavy, but I shall try to do the best I can; perhaps I can not give as much time as heretofore, for I must give some attention to business affairs, but I trust we shall go forward. I am disappointed at the turnout today; perhaps distance lends enchantment, for the meetings at much farther points have been better attended. However, there are many things going on today to interfere and people have had to make a choice. The New York Botanical Garden has gone out of its way to have us today and we appreciate it. We have made plans to go out of the area next year; we have asked Dr. Wherry to ask Mrs. Henry to act as hostess at her garden outside of Philadelphia next May and we hope there will be no small attendance there. There is no botanical garden or arboretum at which there is more to be seen than in her garden. There are many American plants which we have to go abroad to get, and many of these we will see there, which she has collected herself in all parts of the country.

Plans and program for next year are not yet made, but will soon be formulated and presented to you. We will strengthen our seed exchange further and

Mr. Harkness will be a splendid chairman with special facilities to take care of the project. In the next Bulletin there will be a notice regarding it. This is one of the keystones of our organization and a terrific bait for new members, especially in foreign countries. Our growth has been healthy and regular. We invite new members and we have had some advertising in Popular Gardening magazine which has helped and we hope the membership will continue to increase. Our society is now international and will continue to go further afield. We are giving an honorary membership to a Japanese botanist, Dr. Yoshiharu Matsumura, director of the Nikko Botanical Garden situated about 75 miles northwest of Tokyo, Japan, who is doing some intensive special work on Rocky Mountain alpenines in Colorado I&M, Fort Collins, Col., who will add to the prestige of our organization.

There being no further business, the meeting adjourned, after an invitation to attend a lecture at 3:30 in the downstairs lecture room by Dr. John D. Dwyer on Alpine Flora of the Adirondacks, illustrated with kodachrome slides.

IDA A. THOMAS,
Recording Secretary

PLANNING FOR AN EVEN BETTER SEED EXCHANGE

After conducting the Seed Exchange through what have undoubtedly been the two most successful years in its history, Miss Madeleine Harding now passes the Directorship to Bernard Harkness, Rochester, N. Y. Hundreds of members will not need to be reminded of her outstanding service to the Society in this most important activity. Receiving, listing and sending out more than half a thousand seed packets within a period of a few weeks is time-consuming labor, for which it is hard to find words in which to thank her.

In spite of repeated reminders, members forgot that all seeds should be in the hands of the Director before December first. Last year the list was not made up until December 15th, which was too late, and delayed its publication unreasonably, yet after that date 130 more packets were sent in. These could not be published, and were therefore of comparatively little use to the membership, requiring also an unreasonable amount of correspondence heaped upon the already overworked Director. Sending seeds on time is surely not too much to ask of members when they ask so vastly much more of the Director.

For the 1953 Seed List it will be easier to plan ahead. Last year you had to imagine what seeds other members would like you to send in, while this year several of them have indicated their wishes. Don't confine your contributions to the Wish List however. Other members undoubtedly want many other kinds of seed. Only one restriction is necessary. Limit the choice to plants which can conceivably be used in a rock garden, large or small. To offer seeds of a more general nature, as some have done, is unfair to the Director.

Since rock gardens often include pools and bogs, it is proper to include seeds of any except the largest aquatic and bog plants. Many shrubs and dwarf trees have long been included in rock garden plantings, but no one would be likely to want the giant redwood or ponderosa pine or any other forest tree in its normal form for such a purpose, and most dwarfed varieties do not come true from seed. There are some exceptions. It has been found that seeds of certain dwarf hemlocks, *Tsuga canadensis*, may produce a great variety of small forms, including pigmies, and some junipers and yews show a similar tendency.

Of typical rock plants, many mature their seeds rapidly, and shed them immediately upon ripening, so that by the time you read this, it may be too late

to collect some of the earliest. All should be watched if you don't know exactly their habits. You will find the study of seeds and seed dispersal a fascinating field in itself, with countless opportunities to pit your ingenuity against the tendency of seeds to disappear before you can gather them.

When harvesting seeds, small bags or envelopes will be useful, with a pencil handy to copy the exact varietal name from the label. Labeling is of the utmost importance, and nothing should be left to memory, for even the most accurate among us make mistakes, and it is not fair to other members to send out improperly named seeds, which can bring only disappointment.

Most seeds keep best in a dry, cool place. Usually a desk drawer is good enough. However it is advisable to store in tin boxes or covered cans such as crackers come in, or glass jars, because mice and insects are always on the lookout for unprotected batches of their natural food. Unless covers are kept tightly closed, ants may invade the tins, carrying off every seed in a single night. One word of warning. Don't permit any covered tin or jar to stand even for a few minutes where the sun's rays can fall on it, or the resulting heat may destroy the viability of all the seeds it contains.

The Wish List brings up a problem to which there is apparently no final solution. Naturally when members were invited to send lists of the plants they would like to have seeds of, "no matter how improbable," their lists included a few names so improbable that, unless typed, the editor is not quite sure how to spell them. The lists have been checked against Hortus, Bailey's Cyclopaedia of Horticulture, Farrer's English Rock Garden, Clay's Present Day Rock Garden, Gray's Manual of Botany, Britton and Brown's Illustrated Flora, Gabrielson's Western American Alpines, and the editor's memory. Names not found in any of these (the editor's unhappily narrow reference shelf) are here spelled as nearly as possible the way they were written. Where a name represents the effort of a wild-eyed botanist to make a difficult subject more difficult by inventing Martian appellations, the more familiar title of the same plant has been added in parenthesis. It is even possible that certain of the parentheses may surprise the wishers, but the explanations will probably help to bring in the seeds, since those who collect may not associate unfamiliar names with the plants they know.

The Wish List, besides its usefulness in guiding those who intend to contribute seeds, deserves study because it indicates the direction in which rock gardeners are thinking. Knowing what others hope or intend to plant may help to suggest what plants you yourself might use. Since we hope to make it an annual feature, why not begin jotting down, as you read, any plants you would like to experiment with, so that when 1953 rolls around, your wish may be ready to send in.

WISH LIST

(The seeds our members say they would like to see included in our 1953 Seed List)

Abronia cyanoptera
Actaea alba
 rubra
Adlumia fungosa
Androsace lactea
 lanuginosa
 villosa
 arachnoidea

Anemone canadensis
 occidentalis
 quinquefolia
 stellata
 vernalis
Antirrhinum majus
Aquilegia clematiflora?
 ecalcarata

- glandulosa
 Jonesii
 saximontana
 Arabis androsacea
 Arctomecon californica
 Asarum canadense
 Astragalus "cushion types"
 pachypus?
 Azalea arborescens
 calendulacea
 nudiflora
 Bicuculla (Dicentra) Cucullaria
 Calliprora (Brodiaea) ixioides
 Caltha palustris
 Campanula hercegovina
 isophylla
 Morettiana
 muralis
 Piperi
 Waldsteiniana
 Cassiope Mertensiana
 Celmisia argentea
 Claytonia "any"
 caroliniana
 Clematis alpina
 alpina alba
 coccinea luteola
 parviflora
 lanuginosa
 montana
 grandiflora
 rubens
 Viticella caerulea
 magnifica
 tenuifolia
 Clintonia "any"
 Cooperia
 Cyclamen "except C. coum"
 Dalibarda repens
 Delphinium "any of the small
 perennial kinds"
 Dicentra Cucullaria
 oregana
 Dodecatheon calrigo?
 frigidum
 Hendersoni
 Meadia varieties
 philoscia? (blue)
 Douglasia Vitaliana
 Drosera
 Elephantella (Pedicularis)
 groenlandica
 Epigaea asiatica
 repens
 Eranthis
 Erica Mackaiana
 Erigeron aureus
 Eriogonum ovalifolium
 Erodium chrysanthum
 Guicciardi
 Erysimum Kotschyianum
 Fritillaria
 Galpisia lavandulaefolia
 Genista dalmatica
 Gentiana acaulis alba
 bellidifolia
 crinita
 Farreri
 Lagodechiana
 ornata alba
 saxosa
 Globularia nana
 Hartmannia (Oenothera) speciosa
 Helonias bullata
 Hepatica acutiloba
 Hepatica (triloba)
 Hesperocallis undulata
 Hesperoscordum hyacinthinum
 (Brodiaea lactea)
 Hookera (Brodiaea) coronaria
 Hymenocallis
 Iris "any"
 rubro-marginata (mellita)
 "species of East and South"
 Jeffersonia dubia
 Lavauria (Oenothera) brachycarpa
 Layia (Callichroa) platyglossa
 Lesquerella condensata
 Leucocrinum montanum
 Lewisia "varieties"
 Lilium
 Limodorum tuberosum
 (Calopogon pulchellus)
 Linnaea americana
 Lupinus Breweri
 Lvsichitum americanum
 Malvastrum coccineum
 Medeola virginiana
 Maianthemum canadense
 Nemastylis "any"
 Ourisia macrocarpa
 Pedicularis groenlandica
 species
 Penstemon glaber (alpine form)
 "long list, dwarf, cushion
 and shrub"
 Petalostemum purpureum
 (violaceum)
 Pilostaxis (Polygala) lutea
 Pinguicula

Phlox adsurgens	Rumex venosus
bryoides	Rydbergia (Actinella) grandiflora
diapensioides	Salpingostylis coelestina
"dwarf, desert or alpine"	Saxifraga baldensis
Hoodii	Fortunei
Stansburyi	Sisyrinchium grandiflorum
subulata "any"	Spathyema (Symplocarpus) foetida
tumulosa	Streptopus
Polemonium eximium	Synthyris pinnatifida tomentosa
Polygala lutea	Tortipes amplexifolius
paucifolia	Trichinum Manglesii
Potentilla nevadensis	Utricularia
verna aurea	Uvularia grandiflora
Primula "American species"	Veronica nummularia prostrata
"long list"	Viola Freckles
Ramonda	pedata bicolor
"any except R. pyrenaica"	lineariloba
Ranunculus Lyallii var. Traversii	petraea
montanus	rosularis (rosulata?)
Rhexia "any"	Xylophacos (Astragalus) utahensis

IN SEARCH OF A VIOLA

I have written to the Nightingale Nursery, Maidenhead, England, and several others. (What picturesque names the English nurseries have! Green Lane Gardens, Yelverton, The Floral Mile, Twyford, Berks, and Clarence Elliott's Six Hills Nursery, whose catalog is usually a treasure chest of enthusiasm and humor). I want to import some things I can't find in this country or Canada—*Asperula suberosa*, *Campanula calaminthifolia*, *Myositis rupicola*, and others.

What I am most anxious to get and have been many years searching for is *Viola cornuta minor*, a 2½-inch or 3½-inch compact *Viola* blooming all summer. In my opinion, if it is obtainable, it would be one of the most valuable of all rock plants, because of its neat, diminutive habit, beautiful hue of the blossoms, and extraordinarily long period of bloom. I cannot understand why it is unobtainable, unless Stuart Boothman's conjecture is right, that the last specimens were destroyed in the bombing of Britain. Yet I cannot believe there are not a few of these elusive beauties in some garden in England or Scotland. I am writing once more to all English and Scottish nurserymen in a last effort to locate this jewel. No American or Canadian nurseryman seems even to have heard of it.

TIMOTHY G. REMICK

LETTERS TO THE EDITOR

PENSTEMONS IN U.B.C. BOTANICAL GARDEN, VANCOUVER, B. C., CANADA

My range of experience of these lovely plants is none too large, being confined to our local flora plus a few variants of the horticultural trade. Thus the following Penstemons have been grown by me: *PP. Scouleri*, *Menziesii*, *Menscoulesii* (a natural cross between the two preceding. This year we hope to determine whether or not seeds are viable and tetraploid), *Menziesii albus*, *rupicola*, *rupicola albus*, *microphyllus*, *fruticosus*, *Barrettae*, *Davidsonii*, plus

about half a dozen unnamed (?) ones, among which should be mentioned *P. heterophyllus*.

At present I am the caretaker of the Botanical Garden, where last season a start was made by growing some 27-odd species. In this capacity I am anxious to add to our collection . . . Our seasons are variable, unpredictable, but on the whole, here is the over-all picture: spring March 30 or April 10 until May 25, summer May 25 until September 1, fall September 1 until October 20, winter from then on until end of March. It is this last period which is the most difficult. During the last three seasons we have had snow at intervals accompanied by frosts, when considerable damage is done. Naturally the species from dry regions as well as from high altitudes must be grown in cold frames or the equivalent.

GEO. B. BOVING

BOOKS OF ROCK GARDEN INTEREST

IN THE LAST YEAR two very instructive books of interest to rock gardeners have been published in England. One is entitled *Campanulas*, the other *Gentians in the Garden*.

The book on *Campanulas* was written by H. Clifford Crook, a man who has spent a lifetime studying this genus. Mr. Crook has included every known species that is of any horticultural value, and has arranged his descriptions of the plants in alphabetical order. In addition there are about one hundred pictures. At the end of the book there is a list of synonyms, so that anyone growing any of these species can readily ascertain whether any particular plant bears an authentic name. The book is not expensive, and can be purchased from Charles Scribner's Sons.

Gentians in the Garden by G. H. Berry, unlike the standard work by David Wilkie entitled *Gentians*, does not attempt to cover the entire field, but rather selects some of the most popular and attractive species, and gives suggestions and cultural directions for raising them. Evidently Mr. Berry has grown all the plants that he mentions, and with some species has made extensive experiments to determine the best potting mixtures for them. The book covers only about 130 pages, and is also relatively inexpensive.

Both these books are worthy of a place in the library of any ardent rock gardener.

REPORT OF THE NORTHWESTERN UNIT

The Northwestern Unit has had four interesting and informative meetings this year, most of which have been held at the Clubroom of the University of Washington Arboretum, since this accommodates a large number of persons, and is a central location for our far-flung membership. The January 10th meeting was given over to a talk on Seeds by Carl S. English, Jr., a subject which he covered thoroughly.

On February 14th we again met at the Clubroom, where Robert E. Tindall gave a very informative talk on Dwarf Conifers, well illustrated with specimens from his nursery. After the discussion following his talk, Mr. Tindall showed a movie film which included scenes from some of our 1951 field trips. At this meeting it was announced that Brian O. Mulligan, a very active member of our Society, and Director of the University of Washington Arboretum, had been elected President of the American Association of Botanical Gardens and Arboretums.

The meeting of March 13th was held at the home of our Chairman, Dr. C. Leo Hitchcock. It was given over to our annual plant sale, with James R.

Fletcher as auctioneer. It was a most enjoyable and remunerative evening, adding \$121.25 to our treasury.

On April 10th the meeting was again held at the Arboretum Clubroom. Brian O. Mulligan gave an instructive talk on Dwarf Rhododendrons. A great number of specimens were shown, most of them in bloom. Our trip chairman, Mrs. Frank Padavich, told us of plans for our first field trip of the year, which will take us to Lauderdale in eastern Washington, and is the first of many exciting expeditions planned for us. We expect to have a busy summer.

HELEN MORRIS, *Corresponding Secretary*

ROCK GARDENERS BREAKFAST

At the time of the convention of the Montana Federation of Garden Clubs held at Butte in June, 1951, members of the Montana Unit of the American Rock Garden Society and guests met at the Finlin Hotel at a breakfast. Mrs. Warder I. Higgins, chairman of the Northern Region, presided and gave a talk on "Montana Wild Flowers Suitable for Rock Gardens." Mrs. George Johnson, the rock garden consultant for the Montana Unit of the society and a member of the Penstemon Society, gave a talk on Penstemons, demonstrating her talk with several varieties from her garden. Mrs. Daniel J. Mooney told of the natives in her rock garden and Mrs. Gladys Christie Parker, who has a large collection of native alpine and plants from the plains, gave an account of ten early flowering plants and displayed at least twenty varieties of natives from her rock garden. Mrs. Carl Neufelder, who has perhaps the largest rock garden in Montana, made three attractive miniature rock gardens to decorate the table. Mrs. George Johnson potted ninety-nine tiny garden plants in two inch pots that were covered with silver foil. Thirty of these potted plants were used as favors for the members and guests with the place cards. The others were presented to guests after the meeting. Mrs. Neufelder also gave the plants in her miniature gardens to the guests. Mrs. Higgins had a display of her colored photographs of famous rock gardens, which after the breakfast were placed on exhibit in the convention hall. Included in the collection are views of the F. Cleveland Morgan garden at Montreal, Canada; the Walter D. Blair rock garden at Tarrytown, N. Y.; the Boyce Thompson Memorial Rock Garden at the New York Botanical Garden; and the world famous Ohme rock gardens at Wenatchee, Washington. It is planned to have a rock gardeners breakfast next June, when the convention of the Montana Federation of Garden Clubs is held at Missoula, and also to visit Mrs. Walter Ames' beautiful rock garden located on the hillside near the Montana State University.

MRS. WARDER I. HIGGINS, *Chairman*
Northern Region and Montana Unit

MRS. GEORGE JOHNSON RECIPIENT OF AWARD

Mrs. George Johnson of Butte, Montana, an authority on the culture of rock garden plants, was honored for crossing several plants and producing new hybrids. At the convention of the Montana Federation of Garden Clubs at Billings last year, she received the purple ribbon for her horticultural achievement.

Mrs. Johnson crossed the native lavender *Phlox Kelseyi* with *Phlox subulata rosea* and produced a variety she named Phlox Rosette. She also crossed *Dianthus loveliness* with *Dianthus brachyanthus* and got various tones of pink and crimson. Another cross, that of *Penstemon Flathead Lake*, a coral color, with *Penstemon glaber* and *cyananthus*, both of which are rich blue, resulted in colors of lavender, wine, light blue and crimson.

THE AMERICAN ROCK GARDEN SOCIETY
STATEMENT OF NET RECEIPTS AND DISBURSEMENTS
FOR THE PERIOD FROM MAY 1, 1951 TO MARCH 31, 1952

Cash in Bank April 30, 1951			\$ 878.59
Net Receipts For the Period			
Current Dues 1951-52:			
Regular	\$1,298.15		
Sustaining	260.00		
Family	260.00	\$1,818.15	
Prepaid Dues:			
Regular 1952-53	\$ 100.50		
Regular 1953-54	81.00	181.50	
Life Membership		100.00	
Contributions to			
Bulletin Fund	\$ 155.50		
Less—Disbursement			
For Articles	50.00	105.50	
Seed Exchange		5.25	
Annual Plant Sale		34.95	
			\$2,245.35
Net Disbursements:			
Bulletin Costs:			
Printing	\$525.00		
Mailing and Postage	43.95		
Engravings and Cuts	138.94		
Editor's Compensation	250.00		
Sundry	8.00	\$ 965.89	
Deduct:			
Advertising Receipts	\$172.00		
Sale of Back Issues	37.56	209.56	
Net Bulletin Cost		\$ 756.33	
General Expenses:			
Telephone and Telegraph	\$ 17.55		
Postage	83.00		
Printing and Stationery	39.25		
Bank Charges	5.00		
Office Assistance			
and Expense	27.80		
Meetings Expense	46.68	219.28	975.61
Excess of Receipts			1,269.74
Over Disbursements			
Cash in Bank March 31, 1952			\$2,148.33

ALEX D. REID,
Acting Treasurer

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15 Volume 3 (1945)

9 Volume 4 (1946)

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