

BULLETIN

of the

AMERICAN ROCK GARDEN SOCIETY

Vol. 8

May - June, 1950

No. 3

CONTENTS:

Page

- 37—Going West this Summer Dr. C. R. Worth, Groton, N. Y.
40—Paradise of Alpine Plants E. Hauser, St. Moritz
42—Life and Times of Kootenai Rock Plants
Olga Johnson, Rexford, Mont.
46—Letters from Members
Hardy Cyclamen Aymon Correvon
The Hatzendorf Botanic Garden S. L. C. Solymosy
Plants Grown in Sphagnum Moss Robert M. Senior
A Message from New Zealand A. G. Walker
Anthemis aizoon Clara W. Regan
Ranunculus montanus Clara W. Regan
Anemone pulsatilla alba D. E. H.
52—Rock Garden Exhibit Kathryn S. Taylor
54—Seed Exchange
55—Award to Mr. Leonard J. Buck

Published by the American Rock Garden Society and entered in the United States Post Office at Bound Brook, New Jersey, as third class matter; sent free of charge to members of the American Rock Garden Society.

DIRECTORATE

BULLETIN

<i>Editor Emeritus</i>	Dr. Edgar T. Wherry	University of Pennsylvania Philadelphia 4, Pa.
<i>Editor</i>	Dorothy Ebel Hansell	Summit, N. J.
<i>Associate Editors</i>	Carl S. English, Jr.	Seattle, Wash.
	Mrs. J. Norman Henry	Gladwyne, Pa.
	Mrs. C. I. DeBevoise	Greens Farms, Conn.
	Mrs. G. R. Marriage	Colorado Springs, Colo.
	Mrs. Edward M. Babb	Portland, Maine
	G. G. Nearing	Demarest, N. J.
<i>Exchange Editor</i>	Harold Epstein	Larchmont, N. Y.

AMERICAN ROCK GARDEN SOCIETY

<i>Honorary President</i>	Mrs. Clement S. Houghton	Chestnut Hill, Mass.
<i>President</i>	Harold Epstein	Larchmont, N. Y.
<i>Secretary</i>	Dorothy Ebel Hansell	Summit, N. J.
<i>Treasurer</i>	Mrs. Alex D. Reid	Mountain Lakes, N. J.
<i>Vice-Presidents</i>	Leonard J. Buck	Miss Elizabeth G. Hill
	Mrs. C. I. DeBevoise	Mr. Brian O. Mulligan
	Mrs. Harry Hayward	Mr. Arthur R. Virgin

Directors—

Term expires 1951	Kurt W. Baasch
	Lincoln H. Foster
	Marcel Le Piniec
	Peter J. van Melle
	Dr. C. R. Worth
Term expires 1950	Walter D. Blair
	Mrs. Mortimer J. Fox
	Mrs. J. M. Hodson
	Mrs. Clement S. Houghton
	E. L. Totten

Director of Seed Exchange..Miss Madeleine Harding..Brookline, Mass.

REGIONAL CHAIRMEN

Northwestern	James R. Fletcher	Seattle, Wash.
Oregon sub-group	Floyd W. McMullen	Portland, Oregon
Western	Mrs. Coulter Stewart	San Anselmo, Calif.
Northern	Mrs. Warder I. Higgins	Butte, Mont.
Rocky Mountain	Mrs. G. R. Marriage	Colorado Springs, Colo.
Central	Mrs. Walter Dakin	Madison, Wisconsin
Lakes	Robert M. Senior	Cincinnati, Ohio
North Atlantic	E. L. Totten	Ho-Ho-Kus, N. J.
New England	Will C. Curtis	South Sudbury, Mass.
Maine sub-group	Mrs. Nettie Hamilton	Portland, Maine

The American Rock Garden Society, incorporated under the laws of the State of New Jersey, invites you to join with its members in the pursuit of a better understanding of the problems of rock gardening. The annual dues are \$3.50. Address all communications to the home office, 19 Pittsford Way, Summit, N. J.

BULLETIN

of the

AMERICAN ROCK GARDEN SOCIETY

Dorothy Ebel Hansell, Editor

VOL. 8

May - June, 1950

No. 3

GOING WEST THIS SUMMER ?

DR. C. R. WORTH, GROTON, N. Y.

ABOUT this time of year, the popular magazines break out in a rash of articles telling where to spend one's vacation for the greatest enjoyment. As some members of the American Rock Garden Society may be driving to the West Coast during the next few months, it is altogether fitting that this publication, too, should tell you how to get the most for your time and money—not in places to visit for the best meals, scenery or entertainment, but along the roadsides where, by using your eyes a bit, you may glimpse priceless treasures of floral beauty. Penstemons, in particular, are notoriously lovers of roadsides. There are few, even of the rarest species, which cannot be seen from your car window, although in order to do this it may be necessary to follow rough and little-travelled back roads.

On this guided tour I shall not attempt to take you over any but quite good and much-travelled roads, even though some of them wind over mountain tops; nor shall I ask you to walk more than a few feet from the road itself. It is true that very rarely shall I reveal any really scarce plants (even though I know where one can actually drive a car over *Aquilegia jonesii*), and then only when they are protected by park regulations. But I shall take you where, if you wish, you may wander for hours over sheets of *Eritrichium elongatum* and other treasures. Nor need you step in shivering fear of rattlesnakes. In all my western travels I have met but one, while at higher altitudes in the northern Rockies they are never encountered.

Let us, then, be off on our tour for choice rock plants. The southernmost roads will produce little other than an occasional cactus, unless visited in August after the rains have begun. At that time drifts of a wide variety of delightful little plants, mostly annual, but suitable for the rock garden, may be encountered. The desert road from Socorro to Tularosa, New Mexico, is particularly rich in flora of this type. But Highway 66 is best left to Bing Crosby fans, although even along it, at Flagstaff and farther west, are to be found occasional stands of rare penstemons.

From Flagstaff itself, a short drive to Walnut Canyon and the cliff dwelling passes through sheets of *Penstemon linariodes* ssp. *compactifolius*, while *Aquilegia desertorum* dwells in the depths of the canyon—under the watchful eye of the custodian. The cliff dwellings themselves have curtains of the form of *Petrophytum caespitosum* with branching inflorescences, which is called *P. elatius*. A few miles in the opposite direction, near Sunset Crater, we may see *Penstemon clutei* with pink flowers.

The road up the San Francisco Peaks, when I visited there some years ago, was better for horse than for car, but a drive around the base of the mountains will introduce a number of interesting, if not spectacular woodlanders, among them *Lithospermum multiflorum*. The alpine zone of the peaks has nothing of especial note. *Aquilegia chrysantha*, an enormous form of *Primula parryi*, tiny *Polemonium*

viscosum ssp. *lemmonii*, a small form of *P. delicatum* and a moderately attractive *Thlaspi*, as well as ubiquitous *Silene acaulis*, are all that I can recall.

We must go farther north for most of the choice plants, if we are to remain on the highways. I know all too little of Colorado, to my regret, although a drive up Pike's Peak will reveal many of the choice plants which Mrs. Kathleen Marriage has brought to light, such as *Boykinia jamesii*, *Aquilegia saximontana*, and *Mertensia "coriacea."* Farther south, the road west from Salida, over Marshall Pass, is decidedly "poor pickings" and I have not seen anything of importance there or to the west of the pass.

Loveland Pass is another matter, for the main highway climbs to about 12,000 feet and is in the very heart of the alpine zone. What treasures it displays I cannot say, for I was there only briefly, after sunset, and in September when all the seeds were shed. But I thought I deciphered a tiny *Mertensia*, *Dryas*, and other delights. Berthoud Pass is slightly lower. I do not know it at all, but I understand that some climbing is necessary to reach the alpiners.

In the southwestern part of the state, the highway from Ouray to Durango climbs well into the alpine zone, but is very definitely not a road for nervous drivers. Good and rare plants are reported. However, when I have been in the region, rains have been almost incessant and I have not been tempted to do much exploring, nor have I turned up anything of note.

Wyoming, perhaps because I know it better, has even more attractions. Hardly do we cross the Nebraska line, on U.S. 30, before delightful small plants appear. We must be on the alert for *Penstemon erianthera* (lavender), *angustifolius* (intense blue) and *exilifolius* (tiny white, not to be confused with the larger *P. albidus*). Just west of Cheyenne, the road crosses the low Laramie Range, where in spring precious (and still unintroduced) *Mertensia humilis* is said to sheet the summits with blue. It could be found, a few years ago, along the highway itself at the very edge of Laramie, in company with a tiny Phlox. Brilliant gaillardias and many other plants call for frequent stops while travelling the few miles between Cheyenne and Laramie. I suspect that a bit of search would reveal *Polemonium mellitum*, with long cream trumpets, in shady rock crevices.

West of Laramie runs a good road (State 130) direct to the Snowy Range of the Medicine Bows, about thirty miles distant. Here is an alpine zone of great beauty through which the road wanders before dropping over the western slope, and it is a poor plant hunter, indeed, who cannot in a short time bag *Eritrichium aretioides*, *Polemonium confertum*, *Gentiana elegans*, and many lesser fry, without walking more than fifty feet, on level ground, from his car. Westward, this road, and U. S. 30, offer little of note, but there are brilliant yellow composites of dwarf stature which will delight you in late June. Near the highway from Point of Rocks west, you may find a couple of extremely rare penstemons. Just east of Evanston, years ago, I met tiny pink *P. laricifolius*, though never again could I find the place. *P. caespitosus* is quite frequent on banks north of the highway just east of town.

Heading north, from either Evanston or Green River, we find little of importance near the road (though there are many rare plants a few miles off it) until, approaching the Tetons, we drop into Hoback Canyon. There on lime slides, almost within picking distance of the road, we notice the tiny holly leaves and vast purple trumpets of *Penstemon montanus* and curious whorled leaves of *Polemonium viscosum* (a poor form, though), while from cliffs overhead hang sheets of *Petrophytum caespitosum*. The flora of Jackson Hole, at the base of the Tetons, is more showy than rare. Strenuous climbs, on foot or horseback, are necessary to view the rather scanty alpine offering of the peaks themselves, where

I can recall little other than *Primula parryi*, a white *Caltha*, a tiny willow, a poor form of *Silene acaulis*, and rarely a plant of *Eritrichium*.

The short drive westward, to the summit of Teton Pass, is rewarding for the lush display of bloom at the top, which Mrs. Marriage told me is unequalled by anything she has seen in Colorado. The plants are not rare—blue flax, scarlet gilia and the like—but higher up you encounter particularly lovely dwarf phloxes and *Townsendia*. Beware the deceitfully easy-looking slope: to reach the top of the mountain above the pass involves a decidedly arduous climb, with only one unusual plant to be met for all your exertion.

The drive north from Jackson to Yellowstone Park is much of the way through woods, and nothing exciting should be anticipated, nor does Togwotee Pass offer anything but the larger and more trashy plants. The parks, of course, are forbidden ground to collectors, nor have I seen anything to tempt me in Yellowstone.

The road out of the northeast entrance to Yellowstone, leading to Red Lodge and Billings, goes over a collector's paradise. On Beartooth Ridge, for miles the road wanders above timberline, and almost the entire granitic flora of the northern Rockies appears at the roadside: *Eritrichium* by the millions, *Mertensia tweedyi*, *Centiana romanzowii*, *Sieversia turbinata*, a tiny form of *Kalmia microphylla* and of *Campanula rotundifolia* (of course, under another name), both the phyllodoces and their two hybrids, *Saxifraga flagellaris* and *chrysantha* and sundry dwarf willows, phloxes, erigerons, legumes and a host of other delights.

For those who need not look and run, in pre-war days Beartooth Lodge offered excellent food and good quarters, as well as horses for those who wished to explore beyond the roadside. More, the mountain is dotted with tiny lakes which offer wonderful fishing, an excellent place to park otherwise recalcitrant husbands! Yes, if you wish to see the northern alpiners at their best, and without exertion, Beartooth Ridge in late July is the place to go.

After this, anything further that I could suggest in Montana would be bathos, except for the sacred hills where "Jonesy" and unbelievable *Eritrichium howardii* hold forth. No offer of reward or threat of torture will make me reveal their hiding places. There is, however, one other sight well worth seeing. A short distance north of Helena, at the Gates of the Mountains, you may take a boat trip through the high limestone canyons of the Missouri, and there see, clinging to the cliffs, that strangest of American shrubs, *Kelseya uniflora*, making great and ancient mats and flattened domes of almost microscopic rosettes of grey leaves.

Idaho, Nevada, and Utah offer, in my experience, little to be seen from the roadways, great treasures as their mountains may hold. But in Zion National Park, you have only to visit the Weeping Rock to see great wads of rare *Primula specuicola*, with, if I remember correctly, its usual companions, yellow *Aquilegia micrantha* and flaming red *Mimulus eastwoodiae*... These are protected, of course by the park custodians, so that I usually visit them elsewhere in the jumble of cliffs and canyons that is eastern Utah and that makes Zion as dull to me as—well, Flatbush.

On this imaginary journey I have pointed out to you only a tithe of the interesting plants you will meet, only those which have remained in my memory over many years. After reading of all these delights, how can you possibly remain at home, or in a cabin by the sea? Go west, and enjoy the floral displays yourselves!

ANNUAL REPORTS

The annual meeting is in session as the printers put the finishing touches to this issue, so the reports will appear in the July-August issue of the Bulletin.

PARADISE OF ALPINE FLOWERS

E. HAUSER, ST. MORITZ, BAD.

THE peerless beauty of the landscape of the upper Engadine is famous the world over and its center, St. Moritz, is equally well known as the ideal starting point for every kind of winter sport. That it is an equally ideal starting point for botanical excursions is - perhaps luckily - known only to the expert few. Even among these, some of the friends of alpine flowers erroneously believe that all the rare plants have long ago been exterminated by hordes of tourists pouring through the Engadine every summer and are very difficult to find.

Happily, this is not the case. On the contrary, the greatest abundance of alpine plants is spread out here. The geological conditions are varied; primeval rock, slate and limestone all being present allow for a great diversity of plants. Then the borderland between the southern and northern Alps gives differing climatic conditions with respect to altitude, sun, wind, air currents and moisture. And we are so near to the glaciers that all the typical inhabitants of the glacial zone can be found within a few hours' easy climb from nearly anywhere in the Engadine. Then again, after going east by car for about three hours, we can reach the territory of the specifically eastern Alp flora, such as *Silene elizabethiae*, *Dianthus neglectus*, *Phyteuma comosum*. Older flower lovers whose climbing days are over, need not despair of reaching these areas, for there are comfortable mountain railways that will bring them right into the midst of the alpine flower fairyland.

It is especially fortunate for the conservation of some of the rarer plants that the stream of tourists flows through the Engadine mainly from the middle of July till the end of August, whereas all the early plants have their flowering season from the end of May to the end of June. This does not mean, however, that there are no flowers later than June. No, there is an ever-changing pageant of flowers from May till September. As soon as the snow begins to melt under the fierce spring sunshine of these altitudes, white and blue crocuses cover the still brown and sodden meadows, even thrusting and pricking up through the armour of snow. They are quickly followed by the tiny, unbelievably blue stars of *Gentiana verna*. Perhaps the most astonishing of the spring flowers is the fragile Soldanella with its little elegantly frilled, purple and magenta bells. From the sunny side of the rocks enormous cushions of *Saxifraga oppositifolia* blazon forth their violet-purple blossoms and in between dozens of *Primula marginata* and the pink blossoms of *Loiseleuria procumbens*.

All this is only the overture. The big dark blue bells of *Gentiana acaulis* now begin to star the meadows, while the many moist spots are fringed with *Primula frondosa*... All colors are of a quite surprising brightness. The pansy faces of *Viola alpina* vary in brightest purples and blues. Anemones cover great stretches; *A. alpina* with furry outer and clear shell-pink inner petals on limey soil and the beautiful lemon-colored, high-stalked *A. sulphurea* on primeval rock.

In open meadows or clearings in the woods the sweet fragrance, reminding one of lilacs, of *Daphne striata* fills the air. The small bunches of pinkish flowers grow out of big tufts of branches that cling to the boulders strewn the meadows. *D. striata* is to be found only in restricted areas, whereas the sister species, *D. mezereum*, appears plentifully over Switzerland, but always more or less hiding in the woods. This is true also of the alpine variety, *D. mezereum alpina*.

The beautiful blue bells of *Clematis alpina* greet us from rotten trees or unapproachable walls of rock, always climbing safely out of reach. Not many miles from St. Moritz - if you know where to look - in meadows that turn their backs to the sun are hundreds of the clear blue flowers of the peerless Alpine

Columbine, *Aquilegia alpina*. There are only a few places left in which it is now plentiful.

As the year mounts, the snow recedes and we pass through endless tracts of *Rhododendron ferrugineum* or, where there is lime, *R. hirsutum* that extends nearly to the glacial zone. On the way, we enjoy the rich butter-yellow balls of *Trollius europaeus* prettily set off by the super-blue alpine forget-me-nots, bordering every little stream and encroaching into the meadows, often in company with the bright yellow *Geum* (*Stieversia*) *montana* and *G. reptans*. The rocks are overspun with the fine filigree of the tiny leaves and catkins of dwarf willows, such as *Salix repens*, *reticulata*, and *herbacea*.

In the glacial zone, we find the first plants of *Ranunculus glacialis*, *Androsace glacialis* and the tiny *Draba aizoides* and then *Eritrichium nanum*, the heart's



Saxifraga oppositifolia

Photo by Marcine Williams

desire of every rock gardener. The higher we climb, the more are we amazed and delighted. This is really fairyland, spreading right up to the everlasting snow and ice. Just a few names to give some idea of the endless variety of these priceless plants: *Ranunculus glacialis*, *Saxifraga oppositifolia*, *Androsace glacialis* and *brevis*, *Gentiana brachyphylla*, *Doronicum glacialis*, several *Minuartia* and *Gnaphalium*, *Cerastium latifolium*, *Arenaria siliata*, large shallow cushions of *Silene acaulis* rivaling the round bolsters of *Silene exscapa*, pretty *Chrysanthema alpina* filling every nook and cranny. If we want to find *Saponaria pumilio*, *Potentilla nitida* and *Phyteuma comosum*, all occurring at almost the same altitude, we must take a bus and drive eastward for three hours.

The summer meadows are now high in grass and clover and bright with the colors of myriad flowers. The short spring gentians have disappeared and now the taller kinds, especially the stately *G. lutea*, but also *G. purpurea* and *punctata* and their hybrids, dominate the scene. *Polygonum alpinum* and *viviparum* appear in masses and also *Veratrum album*, as a troublesome weed. On the so-called meagre-meadows, the aromatic smell of *Arnica* and the unforgettable, spicy

fragrance, like cinnamon, of the little dark brown orchid, *Nigritella angustifolia*, fills the air.

In August, *Dianthus carthusianorum*, *sylvestris* and the sweet-smelling *superbus* are frequently seen in the Engadine. *Dianthus glacialis* is earlier, of course, and we may see some ripe seed pods on the little plants. *Epilobium dodonaei* and *fleischeri* and large colonies of *E. angustifolius* associate with the dark blue *Aconitum napellus*, making beautiful the banks of streams.

Now gentians proclaim that autumn has come - *G. ciliata* with the characteristically fringed petals and the tall *G. asclepiadea*. *Erigeron alpinum* arrives, and berries appear everywhere, the bright coral clumps of *Sorbus aucuparia*, the hips of *Rosa alpina*, the lovely spindles of *Daphne mezereum* set around with bright red berries. *D. striata* only very rarely produces the exceedingly beautiful, tiny orange fruit. Birds enjoy the plentiful blue berries of *Rhamnus pumila*.

I should like to conclude with a hint which may be of interest to members of the American Rock Garden Society - that many of the inhabitants of the glacial zone which are believed to be impossible or very difficult to cultivate, such as *Eritrichium nanum*, *Ranunculus glacialis*, *Androsace alpina* and *helvetica* and *Gentiana brachyphylla*, have been propagated by me in numbers and have freely flowered under cultivation. I hope to report on conditions necessary for their cultures in a later issue of the BULLETIN.

LIFE AND TIMES OF KOOTENAI ROCK PLANTS

OLGA JOHNSON, REXFORD, MONTANA

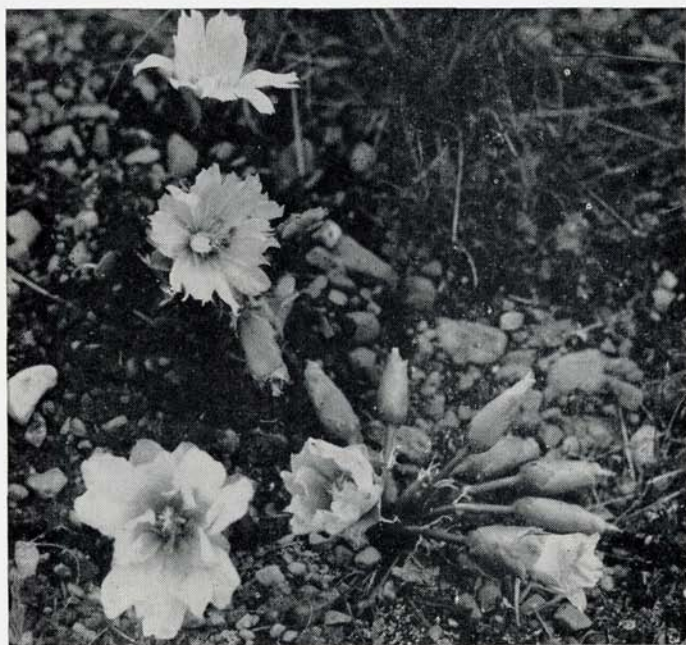
THE Rockies are young mountains. Some of their valleys have collected and kept together sufficient fertile soil to support fine farming communities, but most of them include at least some localities where the soil is very thin; sometimes the deep glacial rubble is quite exposed on humps and ridges, or on flat lands which were formerly the beds of rivers or lakes.

Tobacco Plains, cut across by the British Columbia-Montana boundary line, lies along the Kootenai River as it first enters the United States. Although these rolling Plains are only some sixty miles west of the Continental Divide, the elevation is around 2400—considerably lower than most of the prairie plateau "east of the mountains", as we speak here of the non-mountainous two-thirds of our state. Yet in spite of the Transition Zone altitude of this deep mountain-gird valley of the Kootenai, the flora includes species commonly characteristic of higher zones (a variation in the usual zonal classification peculiar to this section of the Rockies).

On Kootenai Flats, along the river, and on some other parts of Tobacco Plains, there is only a thin sifting of soil in the top layer of gravel, boulders and broken rock. This silt-like, slightly acid soil was long enriched by the decay of each season's crop of the vigorous Bunch Grass. But grazing destroyed the Bunch Grass some forty years ago and with it, perhaps, other plants that once may have flourished here. The Cheat Grass that replaced it is very scanty of herbage. Yet although the whole area is today heavily grazed, in spring the portions that have never been ploughed still light up by the mile with a strange congregation of persistent rock plants.

These plants have to contend with conditions neither alpine nor prairie nor desert, yet having some of the characteristics of all three. The greatest share of the annual "rainfall" arrives in the form of winter snow and spring rains; the frequent summer clouds are apt to spill their moisture higher up when they bump into the peaks. In alpine country, on the other hand, rains and melting snow make it possible for most plants to reach moisture at some reasonable depth all during the brief summer—even in scree.

Thus the long, hot, dry summer season on Kootenai Flats is more like the summer season of the prairies—but on the typical prairie the soil is deeper and heavier, often with a “gumbo” subsoil which effectively prevents the rains from seeping away too soon. So both the alpine and prairie plants can usually find at least a necessary minimum of moisture all season by extending their root system deep and wide. (Note: Dr. Worth’s disgusted remarks—BULLETIN, May-June, 1949—about the western xerophytes that flourished in a wet year in the east, then sulked or died the following dry year, seem to indicate that during the wet year when the plants were becoming established, they simply did not bother, were not stimulated by necessity, to put out any extensive root system, but spent all their energy in a spree of top growth and seed production. Thus they were unfit to cope with the drought when it came, although—indeed *because*—drought was typical of their homeland. As to the seedlings not enduring drought, I have noticed here that most species wait for a wet year to get in their real replacement activity.



Lewisia rediviva

But our Kootenai Flats plants know ‘dern’ well they can’t get moisture *anywhere* during much of most summers, for any summer rain (plenty in rare summers, usually rather scarce) will drain quickly away through the deep rubble below. They need to be desert plants for the summer, but no long eras of complete desert conditions have evolved desert flora here. Indeed, many of the Kootenai Flats rock plants seem instead to have come down out of the wooded hills. The single succulent is *Sedum douglasi*. The two eriogonums are tough, shrubby, evergreen species with wiry, far-reaching roots; the leaves of *E. flavum* are usually downy and tufted, and the leaves of the taller *E. heracleoides* are sparse, narrow and leathery. Both seek out the rockiest spots available. The one Phlox, probably *caespitosa* has economical needle-like leaves on a dwarf plant and a fairly ambitious root system; it further adapts itself to drought by going

dormant in late summer, ceasing to support its leaves, which turn gray and dry. New leaves appear among the persistent dead ones, when sufficient moisture is available.

Of larger plants, the one lupine species not only protects itself above the surface with a thick silken coat of silvery hairs, and below with a deep tap root, but also by dying down to the roots in midsummer. The same protective measures characterize *Balsamorhiza sagittata*. These two, along with the smaller and purbulent-leaved *Penstemon erianthera saliens*, really prefer the sunniest portions of the hills above the Flats, where the *Balsamorhiza* and the lupine also go dormant in summer, but not quite as early as on the rockier land below. There are numerous other species happiest on the sand hills, but in somewhat cooler locations, which appear also in the less austere situations on the Flats—low spots or the edges of shrubbed swales or creek-courses. Among these are *Anemone patens nuttalliana*, *Geranium viscosissium*, *Campanula rotundifolia*, *Penstemon confertus*, *Galium boreale*, one or two castillejas, potentillas, antennarias, etc.; and the low shrubs *Mahonia repens* and *Arctostaphylos uva-ursi*. The first three of these at least have a regular period of complete summer dormancy.



Photo by Winton Weydemeyer

Ranunculus glaberrimus

But the plants that have perfected to the ultimate the summer-dormancy expedient—and are of most interest to rock gardeners because of their brave and dainty brilliance—are the low, shallow-rooted spring bloomers, which pop up, mature, bloom and die down to the ground even as they ripen their seeds—all within the space of a month or two.

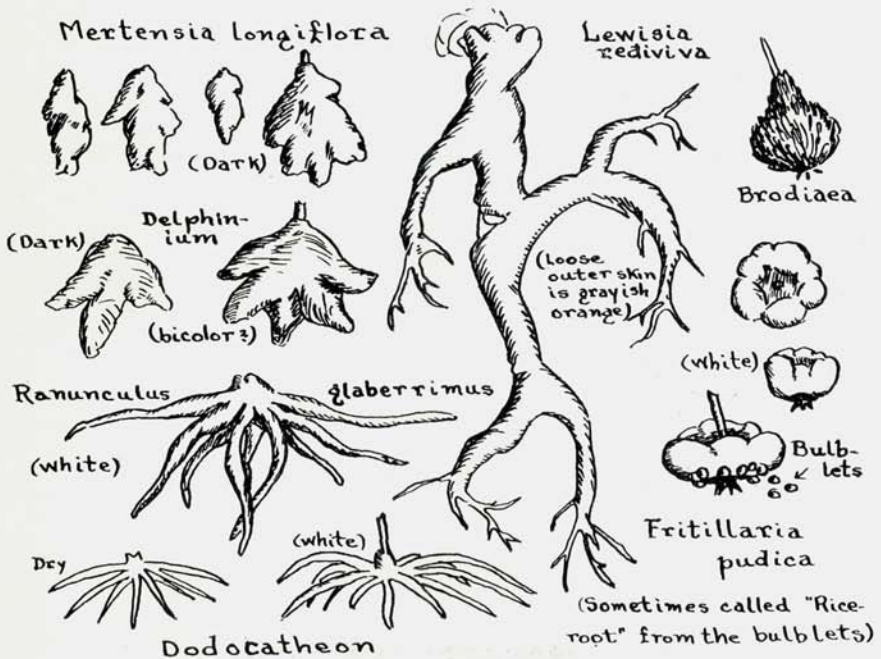
One of the most precious of these brief spring rock plants is *Mertensia oblongifolia*. The sheathed bluish leaves thrust up their tiny promise almost as soon as the snow is gone; inside, the grapelike bunch of flower buds is already formed. (This makes it difficult to ship them before blooming, though I can move them into my own garden safely at this season.) Each unbranched stem bears several simple leaves and a nodding, terminal cluster of long-tubed blooms in opalescent blue. Clumps beside old "cow pies" or in depressions often bear extra large flowers—especially for so small a plant (two to five inches), indicating that they appreciate, as gardeners have proved, some extra nourishment and moisture. After blooming the leaves wither almost at once (depending somewhat upon the

rainfall at the moment) and even the stalk scatters its quickly ripened seed and disappears seemingly within days after the blooms wilt.

Fritillaria pudica grows among the *Mertensia* and the two have a nice affinity in slenderness and nodding bloom, and a nice contrast in color and in the size of the color mass, for the flowers of the Yellowbell grow singly or sometimes two or three on a branched stalk. In April on Kootenai Flats, the tens of thousands of yellowbells and bluebells are set among wide sweeps of hundreds of thousands of pert pink Shooting-Stars (*Dodocatheon*, probably *pauciflorum*) and approximately millions of fringed, white *Lithophragma* stars (*L.*, or *Tellima, parviflora*). No need to tinker here with nature's color arrangement.

Among other species belonging to this brief-season group are *Ranunculus blaberrimus*, an inconspicuous *Saxifraga* of the *rhomboidea* type, and in May *Brodiaea douglasi*, *Lewisia rediviva*, *Delphinium bicolor*, *Arnica fulgens*, and others less conspicuous. The *Lewisia* does not open its silken cups of elusive pink until about Decoration Day in our locale, but meanwhile it has matured its rather succulent foliage (and stored its root nutrients), which dies down before the flowers appear.

I have often puzzled over the varying structures of these plants that are able to live on the lean fare of Kootenai Flats. Of the slender little ones whose weeks awake are so few, the Lily family species—the *Fritillaria*, the *Brodiaea*, *Zygadenus gramineus*, *Calochortus macrocarpus* (July blooming, and the only one set very deeply)—have, of course, the familiar bulbous storage structure. By their range, these seem to be more or less prairie plants, though the *Fritillaria* grows in the Kootenai country at higher altitudes also, upon almost bare rock terraces surrounded by deep evergreen woods; here it finds plenty of water in spring, little or none in



Storage roots of some summer-dormant rock plants

(Natural Size)

summer. The *Mertensia*, the *Delphinium*, the *Dodocatheon*, the *Sedum* and the *Lithophragma* are also happy on these cliff terraces, along with others which do not appear (at least not now) on the hot open flats below; among the latter are *Penstemon albertinus* and in the dampest places *Camassia esculenta* (quamash). The *Camassia* and the *Lewisia* were staple food plants of the Kootenai Indians.

The non-lily, summer-dormants mostly have either fleshy roots or dry tubers, all very shallowly set; these vary a good deal in structure. The tiny flat whorl of the *Dodocatheon* root, like a rimless wheel, lies just beneath the surface. Perhaps this is why our Shooting-Star is able to live as happily in lush meadows as on Kootenai Flats or atop cliffs. The fleshy spokes of the root wheel shrivel when dormant until in very dry seasons there is nothing left but a miniscule hub scarcely recognizable as anything with life in it.

Ranunculus glaberrimus has a root somewhat similar to the *Dodocatheon*, but larger, fatter and more irregular. A clump of either of these species contains a tangled mass of separate individual root whorls, each one evidently bearing but a single flowering stem. The still larger fleshy roots of *Lewisia rediviva* are branched, often tortuous; a single root sometimes produces a whole bouquet.

Very different are the brittle, dark-colored, little tubers of the *Mertensia* and the *Delphinium*, so rough and irregular in shape that it is often hard to tell which end is "up". (A commercial grower of tulip bulbs, to whom I shipped a quantity of *Mertensia* roots, described them in terse amazement as "a mess".) The storage roots of the *Lithophragma* are more like clusters of tiny coral beads, crumbling apart at a touch when dormant.

The most surprising thing about these dry-landers is that so many of them are so adaptable, and so subject to improvement under cultivation. Perhaps this is partly because they have come to Kootenai Flats from prairie, meadow or mountain. Most of them seem also to seed readily on the Flats. In addition to the habitat variations already noted, the *Phlox*, the *Ranunculus*, the *Delphinium*, the *Lithophragma* and *Sieversia ciliata* are among those which are found also on the sandy hills above the Flats, often thrusting up through a thick layer of evergreen needles. The *Phlox* much prefers the sun, but the others bloom blithely in partial shade. The *Lithophragma*, indeed, is commonly called Woodland-Star and usually described as "requiring shade, rich soil and moisture"—but they are countless on Kootenai Flats! The Larkspur, five to ten inches high on the Flats, becomes a two-foot border plant when established in border soil—useful because of its intense colors and very early blooming date.

Even *Lewisia rediviva*, though demanding excellent drainage, is said to be the easiest of the *lewisias*. It will bloom in merely sandy soil, if on a raised bed where water will not stand and where the sunlight reaches it unimpaired.

Long ages ago, this section of the Kootenai Valley was supposedly a lake, formed by a dam of glacial ice farther south. Today, the United States Government has plans for a dam of steel and concrete to achieve the same effect on a smaller scale—and then the Kootenai Flats plants of Tobacco Plains will be no more. Many of them, however—or their counterparts from similar situations—will bloom and reproduce happily in the rock gardens of the forty-eight states.

LETTERS FROM MEMBERS

HARDY CYCLAMEN

I was very much interested in the notes on hardy *Cyclamen* by Mrs. Stewart in the first number of the *Bulletin* for 1950, and also in the reference to the book by my grandfather, the late Dr. Henri Correvon.

I find this genus of *Primulaceae* extremely interesting, especially, as Mrs. Stewart states, the flowers are obtained out of the usual flowering period in the

rock garden. I find that the flowers which give the rock gardener the greatest joy are those which appear at the very beginning of the year. Here, in Geneva, we very often have the lovely *Cyclamen ibericum* or *C. coum* in flower at the end of January, though we frequently have severe frosts until March.



Photo by A. Correvon

Cyclamen ibericum in the middle of February

In gardens, there is sometimes confusion between these two species, *C. ibericum* having maculated leaves, *C. coum* having quite green leaves, but both with reddish reverse.

Several *Cyclamen* are supposedly not hardy. This is not true, as they grow in cultivation up to 5,000 feet high in mountain gardens. But they do not endure moisture. All the *Cyclamen* which I have found in the wild are always on steep and very stony slopes, under bushes or trees. Of course, African or Asiatic species might be tender, but I would not be surprised to find them resisting severe winters, if kept absolutely dry.

Here I grow them either in the needles of coniferous trees (*Cedrus libani*, absorbing all excess of water) or even in the crevices of a northern wall, where they flower very well. A red *Cyclamen ibericum* flowers also abundantly and regularly every February through the branches of a very old plant of *Erica carnea*.

I must point out a slight error. *Cyclamen balearicum* does not grow only in the Balearic islands, but also in some rare places in the south of France.

We have now lost *C. rolfsianum*. I fear that it is no longer in cultivation and believe that its real native place is mysterious. My grandfather told me that the only man knowing its home on the Mediterranean African Coast was dead.

Aymon Correvon, Geneva, Switzerland

POSTSCRIPT ON GENTIANA FARRERI

At Mr. Jack Drake's suggestions, I acquired GENTIANAS by David Wilkie (Scribner's). The description in this book most nearly fitting my plant is a hybrid between *G. lawrencei* and *G. farreri*. I suggested this to Mr. Drake and he writes, "I think you may have hit the nail on the head".

So now I suppose we'd better wait till the seeds I sent him flower - only two or three years - unless some member of the Society has any ideas on the subject!

Doretta Klaber, Quakerstown, Pa.

THE HATZENDORF BOTANIC GARDENS

AS members have expressed an interest in the Hatzendorf Botanic Gardens and its founder, the late Dr. Lemperg, I am glad to furnish these notes as requested by the editor of the BULLETIN.

The *Hortus Botanicus Experimentalis Styriae Orientalis*, situated in the locality of Hatzendorf, Austria, was founded forty years ago by Dr. Fritz Lemperg, a botanist of world repute and recently deceased. As implied by the title, the botanic garden is a botanical research institution for the purpose of studying both the habits and conditions of life of indigenous and foreign plants, while due emphasis is given to the use of spontaneous plants or at least to plants raised from seeds collected from spontaneous plants.

In studying the resistance of plants to cold weather conditions, endeavors have been made gradually to enlarge the areas of origin. To acclimatize plants originating from the south, seeds grown as high as possible are collected, with a view to increasing the plants' resistance to local conditions. Other facts, of course, and those not of minor significance, must be considered as, for instance, air humidity. Here we sometimes meet with agreeable surprises - *Passiflora coerulea* blossoms and winters in the open without any covering at all.

The Hatzendorf Botanic Garden is not a park in the generally accepted sense of the term, but a botanical collection consisting of the following:

1. The Arboretum of deciduous, semi-evergreen and evergreen trees, shrubs and coniferous trees which have to grow without cover. Plants in need of protection are planted in a high and thin wood and small undergrowth planted amidst the Alpine Park.

2. The Alpine Park which is comprised of the so-called Shadow Alpine Park on the northeast site and Alpina Nos. I, II, III lying in SSE position in relation to Mt. Everest, the rear portion facing same in a N and NW direction. Furthermore, six smaller alpine parts showing every gradation from full exposure to the sun, light to complete shade; then the so-called alpine road and alpine garden ascending in a serpentine to a higher altitude.

3. The Forbidden Hills, beds kept in complete shadow and to insure their remaining absolutely free from lime, raised above the ground.

4. The Desert, used for the cultivation of desert steppe plants. Special attention is paid to insure the immediate percolation of rainfall. Desert conditions - absolute drought in summer - are secured by covering part of the area.

6. The Sphagnum Swamps in which many North American guest plants are grown, including *Cornus canadensis*.

7. The Nursery which consists of twenty-five concrete beds, a number filled with peat moss, others with sand to hold potted and dibbled seedlings until they are strong enough to stand transplanting. Young plants requiring winter shelter are kept in six deep beds, while plants of a particularly delicate nature are given electrically heated beds for hibernation.

The war wrought havoc in the park. Both the botanic garden and the surrounding area were a battle ground for weeks. Tanks drove through the Arboretum and part of the Alpine Park was devastated by artillery fire, boughs of the finest conifers being used to camouflage guns. A magnificent specimen of *Sequoia sempervirens* was razed to the ground by the blasts of guns. Many were felled for the sake of better sight, many being injured beyond recovery.

The plant collection embraces approximately 19,000 different registered species, varieties, hybrids and forms.

The most interesting part of the collection comprises the specimens collected

by Dr. Lemperg in *loco natalis* in the mountains of Albania, Greece and Crete in the course of his botanical expeditions between the years 1934 and 1939.

Dr. Lemperg was indefatigably active, being a member of several scientific societies and author of many treatises published in periodicals of a technical and scientific character. Part of his life work on the genus *Dianthus* was published in 1936 in the review "*Acta Horti Botanici Gothoburgiensis*". Dr. Lemperg was working right up to the last day on the monograph of *Dianthus*, when his pen dropped from his lifeless hand.

My current experiments are directed at finding the details of condition essential for the cultivation of the genus *Penstemon*. I collected about half the known species for the Hatzendorf Botanic Garden. The rest of my work includes anatomical researches concerning the needles of Coniferae; experiments on acclimatization; studies of effects of lunar periods on plant growth.

In concluding my short report, I ask my American colleagues to reflect for a moment while watching their blossoming and thriving plants, that at the Hatzendorf Botanic Garden *Lewisia rediviva* and *Lesquerella* are flowering in bomb craters. And may I express the hope that humanity will soon appreciate the lessons taught by plants, enabling man to exist similarly, enjoying life peacefully without obliterating one another.

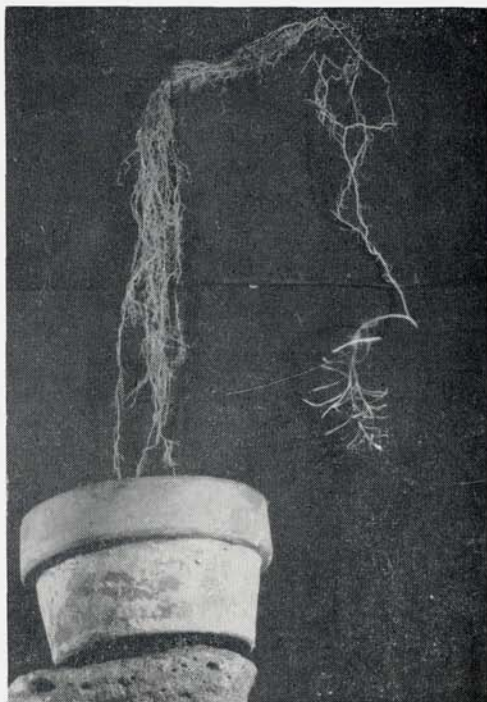
S. L. C. Solymosy, Atlanta, Georgia.

PLANTS GROW IN SPHAGNUM MOSS

ROBERT M. SENIOR, CINCINNATI, OHIO

YEARS ago, the late M. Correvon, of Geneva, Switzerland, displayed a collection of rock plants grown in pans containing shredded sphagnum moss. Many times in the past, we have grown some of the more difficult rock plants in this medium.

Last summer, for example, which was an unusually hot one, we had a certain species of *Campanula* in pots containing soil and also another pot containing only sphagnum. Kept in a small alpine house, where the temperature often soared in the high nineties, the plants in the soil mixtures all perished, whereas the plants in sphagnum managed to endure the intense heat. If we were to attempt to find at least a partial reason for this, we might ascribe it to the fact that sphagnum acts like a sponge, supplying the necessary humidity to the leaves and stem.



Roots two feet long on *Phlox mesoleuca*

For almost a year, we kept *Phlox mesoleuca* in a pot filled with sphagnum, occasionally giving it a small application of liquid fertilizer. This fall, we decided to remove the plant from the pot and, much to our amazement, found that the roots were two feet long. The picture shows the plant, together with the pot in which it was grown. Observe the short stem in relation to the roots.

If you have some plants that you cannot grow in potting soil, try to grow them in the manner above mentioned. You do not necessarily need an alpine house. In the spring, place the pots outdoors in full sun, or use a sphagnum trough. One word of warning. Don't place the pot on the ground, but rather on a large rock or on a wall, where it would be difficult for sow bugs or slugs to reach it. Of course, under these conditions, it probably would be desirable in the fall to remove the plant from the sphagnum and put it in the coldframe for the winter.

A MESSAGE FROM NEW ZEALAND

Here is what a New Zealand rock garden has to offer after a particularly long hot, dry spell. Writing as I am on March 8, 1950, I must confess that the garden has a jaded appearance, but on taking note I find that there are a number of different plants and bulbs flowering.

The brightest touch of color is *Kniphofia galpini* and Dr. Thompson, the letter a New Zealand hybrid. Their two-foot spikes seem somewhat alike until held closely together, when the difference is marked. I have another dwarf, Little Treasure, canary-yellow, but this has now passed its flowering period.

A group of *Sternbergia lutea*, sometimes referred to as the original "Lilies of the Field", is also gay. Slow of increase in my garden, it is nevertheless well worth growing. A quieter display is made by *Cyclamen neapolitanum*, which is not yet showing color.

Lithospermum is still a mass of blooms and looks very fresh despite the dry weather.

All these are flowering: *Geranium grandiflora*, *Cypella herberti*, *Colchicum* in mauve and white, *Allium carinata*, *Lantana sellawiana*, *Fuschia Tom Thumb*, *Verbena chamaedryfolia*, *Cerastostigma plumbaginoides*, *Erodium corsicum* and *amanum*, *Viola Bowles Black* and *cornuta*, and a double *Meconopsis* which was sold to me as *intergrifolia*. But as it is orange and a foot high, it does not correspond with the description of *intergrifolia* as given in Marsfield's ALPINES IN COLOR AND CULTIVATION. This book is a gold mine of information and help to me, for there is no rock garden expert anywhere near here.

I have just finished planting one hundred new daffodils. While we have plenty of the exhibition kinds here, we lack many of the species. A friend and I are trying imported ones this year from England but I believe the losses are heavy. I have tried to get seeds but there is very little available.

The little Hoop-Petticoat is the only one other than *campernelle* which is plentiful. Hawere, a *triandrus* hybrid, New Zealand raised, is very beautiful and becoming plentiful. The pale yellow flowers, three or four to a stem, are inclined to have reflexed perianth. I myself have *johnstoni* Queen of Spain but have never seen it elsewhere and have been told it is quite rare here. *Infanta*, a *cyclamineus* hybrid, which I believe is also New Zealand raised, is pleasing, too.

There is hardly a seedsman who stocks seeds of our native plants and I can not gather many personally, so it is not the easiest thing to send to the Seed Exchange. However, I shall try to send some and shall send seeds of other plants. If any members have any special requests and will so indicate, I shall do my best to supply.

A. G. Walker, Manawatu Line, New Zealand

ANTHEMIS AIZOON

Not many of the family of *Anthemis*, or *Achillea*, are fit plants for the rock garden. They spread too rapidly, flop wildly over smaller plants, or are too coarse to associate with more delicate plants. Moreover, many of them are biennials. None of these harsh things can be said of *Anthemis aizoon*, sometimes called *Achillea ageratifolia*. It is a species of neat tufted habit, that likes nothing as well as a crevice on a hot, dry slope. The leaves are thin and narrow, with finely toothed edges, and of a silvery whiteness. The flowers are small white "daisies" with a cream center. It can be pulled to pieces for further propagation and is practically immortal.

Clara W. Regan, Butte, Mont.

RANUNCULUS MONTANUS

In April, the dark green leaves of this yellow buttercup can be seen breaking through the earth, in preparation for its annual display of wide golden flowers, which are brought forth in the greatest abundance. It is charmingly easy to grow, having no whims to be catered to, except the usual need for good loamy soil and a fair amount of moisture. It likes to be planted in full sun. After blooming it begins to pine away, but this is only a temporary withdrawing for the rest of the summer. It will appear again in spring and twice as large. It grows so rapidly that it should be divided frequently.

Clara W. Regan, Butte, Mont.

ANEMONE PULSATILLA ALBA

Most of us are familiar with the light violet-purple chalices, filled with golden-yellow stamens, of the Pasque Flower. But how many have seen *Anemone pulsatilla alba*? When it was sent to me last year by Mr. N. A. Hallauer, of Webster, N. Y., I did not believe that the white form could have the same appeal. I was wrong, however, for *pulsatilla alba* is exquisite. The golden-yellow stamens seem even more golden and fairly gleam against the pure white flowers.

Last spring, six fat fuzzy buds opened one after another. So far this spring, ten have opened. The individual flowers have not lasted as long, due, I believe, to the damp, sunless days and to several heavy showers which shattered their beauty.

The silky-hairy, lacy foliage, which makes a nice clump a foot or more wide, remained green until October.

Anemone pulsatilla alba is rare and not easily obtained, but it is certainly worth looking for.

D. E. H.

BACK ISSUES OF THE BULLETIN

The following volumes of the Bulletin are available at \$2.50 per volume.

5 Volume 1 (1943)	15 Volume 4 (1946)
24 Volume 2 (1944)	6 Volume 6 (1948)
21 Volume 3 (1945)	7 Volume 7 (1949)

These back issues of the Bulletin are a gold mine of information. Why not add them to your library shelves for ready reference

AMERICAN ROCK GARDEN SOCIETY

19 Pittsford Way, Summit, N. J.



Photo by P. E. Genereux

The shady section of the rock garden exhibit

ROCK GARDEN EXHIBIT At The Boston Spring Show

THE New England Regional Unit of the American Rock Garden Society was very fortunate in having its chairman, Mr. Will C. Curtis, consent to stage for its members a rock garden of real educational value at the Boston spring flower show. Various exhibits put on by Mr. Curtis over a period of years have invariably attracted much attention. He has received numerous gold medals and sweep stake prizes including President's Cup, New York Horticultural Society's gold medal given for the most beautiful exhibit at the Boston show, twice in succession, and the Bulkley Medal three times. This exhibit received a first prize and a gold medal.

It was the desire of the members of the Unit to plan a rock garden to suit, as much as possible, the somewhat rocky and sparsely wooded pieces of ground now frequently acquired by new home owners and to avoid features such as running water and rock construction using entire ledges which, although very beautiful, are seldom found on most house lots. The cost and labor involved for the home owner also influenced the type of garden planned. The rocks were pieces of broken granite ledge, a common outcrop in New England. One section simulated a sunny southern slope; a somewhat larger area, a shaded northern exposure. The whole garden covered approximately 1,000 square feet.

The sunny section of the rock garden featured species tulips, dwarf iris, several species of *Iberis*, *Pulmonaria angustifolia*, *Anemone pulsatilla*, *Dianthus arenarius*, and choice woody plants, both flowering and coniferous. The flowering shrubs included *Cytisus procumbens*, *Forsythia bronxensis*, *Daphne cneorum*, *Prunus glandulosa alba* and *Leiophyllum buxifolium prostratum*. Interesting shrubs not in flower were *Vaccinium vitis-idaea* varieties *majus* and *minus* and species of *Calluna*, *Cotoneaster*, *Berberis*, *Thymus* and *Hypericum*. No difficult alpine plants were used.

A collection of rare dwarf evergreens from the Arnold Arboretum was an outstanding feature of the sunny section.

The shady rock garden also contained excellent plant material. An

attractive pool at the base of the slope was bordered with ferns and a fine colony of *Helonias bullata* in full flower, with clumps of *Dicentra eximia alba* nearby. There were also various primroses, epimediums, azaleas, *Shortia galacifolia*, *Saxifraga umbrosa primuloides*, *Rhododendron racemosum* and *Pieris floribunda*. Appropriate groundcovers in both sections added interest, although they were not in flower.

Contributions of money and plant material were received from several members of the Regional Unit. In addition, generous donations of excellent plants and bulbs came from N. A. Hallauer, The Barnes, Weston Nurseries, Kelsey-Highlands Nursery, the Arnold Arboretum and the Waltham Experiment Station.



Photo by P. E. Genereux

Rare dwarf evergreens from Arnold Arboretum were featured in the sunny section.

The following members of the Unit furnished help in staging the exhibit or were available to answer questions while the show was in progress: Mrs. Clement S. Houghton, Mrs. Geoffrey G. Whitney, Mrs. Frank H. Wright, Miss Mabel E. Turner, Dr. Helen C. Scorgie, Mrs. Carl E. Ganter, Miss Madeleine Harding, Mrs. Lucien B. Taylor, Mr. Will C. Curtis, Mr. Stephen F. Hamblin, and Mr. John Thibodeau. This group was reinforced by the class in Gardening at the Boston School of Occupational Therapy. Twenty girls helped during the week and increased their knowledge vastly as a result.

Mr. Alexander Heimlich was a member of the Committee in charge of the exhibit and contributed plant material for it. His own beautiful ledge garden kept him from more active participation, however.

Kathryn S. Taylor, Dover, Mass.

ARTICLES FOR THE BULLETIN, PLEASE!

This is the first time in many months that an appeal for articles for the BULLETIN has appeared in these pages. Material has come in, slowly to be sure, but in sufficient amount to keep the columns filled with stimulating information.

Now the file marked "Future Issues" is quite flat and the Editor urges members to contribute from their store of experiences in their gardens.

You would be surprised to learn how much the members in one part of the country enjoy reading what plants members in another part of the country have in their gardens, and how they are growing them. The Editor knows - from the letters which come to her desk.

A number of members have promised articles - will you please act on your promises, NOW! And if you type, will you send carbon copy along with the original manuscript.

SEED EXCHANGE

Mr. H. Lincoln Foster, director of the Seed Exchange, announces that he has received the following seeds since the previously published lists:

Lilium formosanum (from Mrs. B. M. Bobbit, Ada, Okla.); *Penstemon diphyllus*, *PP. exilifolius*, *paysoniorum* and *virens* (from Mr. Amel. F. Priest, Peru, Iowa - see Mr. Priest's article in the next issue of the Bulletin); *Gressorrhiza rockensis*, *Helleborus niger*, *Hesperanthus buhri*, *Iris inominata* hybrids, *Lithospermum* mixed, *Mimulus* Queen Prize, *Narcissus bulbocodium conspicuus*, *Narcissus jonquilla*, *Pimelea spectabilis*, and *Phygellus capensis* from Mrs. C. Walker, Manawatu Line, New Zealand.

Send your request to Mr. Foster, Mill Stream House, Falls Village, Conn., with stamped self-addressed envelope.

HIGH AWARD TO MR. LEONARD J. BUCK

The gold medal of the National Association of Gardeners has been awarded to Mr. Leonard J. Buck for his outstanding contributions to horticulture, and in particular the beautiful rock garden on his estate, "Allwood", Far Hills, N. J. Jersey, in which field of gardening he has proved himself to be one of the foremost artists.

This gold medal is not lightly won, as it has been awarded only six times or so previously in the almost fifty years' history of the National Association of Gardeners.

THE SCOTISH ROCK GARDEN CLUB

The Club's aims are to create an interest in rock garden plants and encourage their cultivation, especially amongst those who have only small gardens.

By becoming a member of this club, you are entitled to:

1. Receive the Journal and other publications
2. Free advice on cultivation, etc., by experts
3. Take part in exchange and distribution of seeds
4. When and if in Scotland attend all shows free of charge, participate in any organized visits to gardens and attend lectures and discussions

Subscription 10/- (shillings, \$1.50) per annum

Life membership £10. ..(\$28.00)

Members of the American Rock Garden Society are requested to make themselves known if they attend any of our shows or other functions at which they will be very welcome.

Further particulars may be obtained from:

MAJOR GENERAL D. M. MURRAY - LYON,
Honorary Publicity Manager
Ardcuil, Pitlochry Perthshire, Scotland

Exeter Wild Flower Gardens

Native American Ferns and Wild Flowers

Isaac Langley Williams

P. O. BOX 352

EXETER, N. H.

— Catalogue On Request —

ROCK GARDEN PRIMULAE

	each
PRIMULA ROSEA GRANDIFLORA	\$0.50
P. JULIANA x Dorothy	.50
P. JULIANA x Lady Greer	1.00
P. JULIANA x McGillivray	.75
P. JULIANA x Nettie P. Gale	.50

L. N. ROBERSON

1540 E. 102nd St. Seattle 55, Wash.

WESTERN AMERICAN ALPINES

Wildflowers of the National Parks

For any plant native to Montana, Idaho or northern Wyoming, remember

FRANK H. ROSE

1020 Poplar St. Missoula, Mont.

Plant a rock watt with *Lewisia rediviva*. It gives you time. Many live for a year out of the ground. Small plants \$3.00 per 100.

For reading and gardening
pleasure

PRIMROSES

Quarterlies of the
AMERICAN PRIMROSE SOCIETY
contain articles by British and American
authorities on

CULTURE
DEVELOPMENT
HISTORY

Four bulletins \$1.50

Mrs. Earl A. Marshall, Sec'y
1172 S.E. 55th Ave. Portland 15, Ore.

THE AMERICAN PENSTEMON SOCIETY

Cordially invites you to join its grow-
ing list of enthusiastic members.

If you are interested in Penstemons,
you will be interested in the activi-
ties of the society.

Write to the Secretary,

MRS. EDWARD M. BABB,
213 Lambert St., Portland, Me.,
for full particulars

Primula Juliae Hybrids

Choice Rock Plants

Dwarf Shrubs

Iris

CATALOG ON REQUEST

Carl Starker Gardens

Jennings Lodge, Oregon

**"FLORAIRE" ORIGINAL
SEEDS**

CORREVON FILS
CHENE - BOURG
Geneva, Switzerland

SEEDS of ALPINES

25 VAR. POSTPAID \$5.00
1950 LIST FREE

Here are "Different" Flowers



3000 rare beauties that will make your garden distinctive—and delightful. Our Catalog, Seeds-Plants-Bulbs, will interest in word and picture.

Ask for your copy

REX D. PEARCE

Moorestown

New Jersey

PETRIFIED PLANTS

THE REMAINS OF THE OLDEST KNOWN PLANTS, now hard limestone. Available in unique shapes. Some of them are natural bird baths. Others are beautiful pieces for the building of rock gardens.

Also, on request, "A Story in Stone" by Harold Orville Whittall, Prof. of Geology, Colgate University, which tells of the marvelous display of the earliest forms of life at Petrified Gardens.

THE PETRIFIED GARDENS

Mr. and Mrs. Robert R. Ritchie,
Proprietors
Saratoga Springs New York

RARE ALPINES FROM THE WORLD'S FAR CORNERS

Besides Alpines many rare and interesting varieties of Azaleas, Heathers, Primulas and Rhododendron species are listed in our catalogue.

PLEASE ASK FOR IT.

ALPENGLOW GARDENS

Michaud & Company

R.R. 4, New Westminster, B. C., Canada

ROCKERY PLANTS

We offer a large collection, including rare alpines for your rock garden.

First-class field-grown plants.

Send for

Our Free Catalogue

N. A. HALLAUER

Rt. No. 2 Webster, N. Y.

CARROLL GARDENS SPRING CATALOGUE

Your Guide To Better
Gardening — Now Ready!

Features the world's finest Perennials, Roses, Bulbs, Shrubs, Vines, Wild Flowers, etc. Beautifully illustrated in natural colors.

FREE—Write for your copy now.

CARROLL GARDENS

Westminster 8, Maryland

GREAT PLAINS PLANTS

are worthy of close investigation

Creeping Phlox, non-climbing Clematis, all-season Evening Primroses, brilliant Penstemons, fine dwarf Asters, Viola montanensis and nuttalli, a charming dwarf open-sun Mertensia, Anemone caroliniana, Cushion Astragali. Also shrubs, bulbs, seeds.

ASK FOR A CATALOG

CLAUDE A. BARR

Prairie Gem Ranch

Smithwick, South Dakota



Mayfair NURSERIES

Box 87

Hillsdale, N. J.

Rock Plant Specialists

Offers You
A LONG LIST OF CHOICE AND RARE

ROCK PLANTS

All

POT GROWN

FOR BETTER PLANTS AND SAFER TRANSPLANTING

Our highly descriptive and illustrated catalog contains hundreds of noteworthy plants - free to members of the American Rock Garden Society, 25c to all others.

Visit our better, larger and easier-to-find nursery on Ruckman Road, in Hillsdale, New Jersey, just a twenty minute drive from the George Washington Bridge.

WALTER A. KOLAGA, Proprietor

Colorful **SEMPERVIVUMS**

10 varieties (labeled).
Prepaid \$2.00
Over 100
different varieties.

MacPHERSON GARDENS



2920 Starr Ave.

Toledo 5, Ohio

.....
Make A Hobby Of Hardy Sempervivums!

SPRINGTIME

and

PRIMROSES

in

BARNHAVEN'S

1950 Catalog

BARNHAVEN

Gresham

Oregon

HARDY PLANTS of the **BLUE RIDGE**

We can furnish hardy perennials, native Orchids, ferns for rock and bog gardens, Lilies for naturalizing, vines, climbers.

Rhododendrons, Azaleas, native evergreen and deciduous trees.

100 rock garden plants (specify sun or shade) \$13.50. 100 native Orchids (shade or partial shade) \$21.75.

WRITE FOR PLANT LIST

GARDENS OF THE BLUE RIDGE

E. C. Robbins, Nurseryman

ASHFORD,

Box 8,

McDOWELL CO., N. C.