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ROCK GARDEN SOCIETY

C. R. Worth, Editor

Vol. 17 October, 1959 No. 4

ALASKA WILDFLOWERS FOR YOUR GARDEN

Mrs. Louis Strutz, *Anchorage, Alaska*

It was more than thirty-five years ago that I collected and transplanted to my garden my first Alaskan wildflowers. There were very few roads in Alaska in those days, and fewer automobiles, and as we didn't have one of the few, I seldom got more than a few miles from home. However, the area surrounding our home was just as nature made it, — spruce, cottonwood, birch and aspen trees, with undergrowth of wild raspberries, currants, red, black and blue, high-bush cranberries *(Viburnum edule)*, red elderberries *(Sambucus racemosa)*, wild roses *(Rosa acicularis)*, blueberries, Labrador tea *(Ledum groenlandicum)* the Stevens spiraea *(Spiraea beauverdiana)*; and under all a thick carpet of mosses, low-bush cranberry *(Vaccinium vitis-idaea)*, *Cornus canadensis*, timberberry *(Geocaulon lividum)*, and of course, many flowers.

Within a few years we had cleared a large part of our acreage for lawn, flower borders, vegetable garden, strawberry and raspberry patches, and space for our chickens and cows.

The children and I often took long walks, and one of our favorites was to the beach, a special spot known as Bootlegger's Cove. It was there that I found the lovely rose-colored shooting-star (or Johnny-jump-up as I knew it as a youngster in Montana) *Dodecatheon macrocarpum*, and *Iris setosa*, growing together in heavy clay soil, along the banks of a creek, over which the waters of Cook Inlet creep at extreme high tide. As we have the second highest tides in the world here, these flats are washed with salt water quite frequently. These two flowers seem to revel in such situations as they are often found growing so. They are often accompanied by *Smilacina stellata* and *Fritillaria camchatcensis* (the children called this 'the stink lily'), and in the particular spot where I found these first specimens, *Rubus arcticus* and the white beach daisy, *Chrysanthemum arcticum*, grew in abundance. On one of our later trips to this area we found the white form of the shooting-star which seems to be quite scarce. These plants were all transplanted into my garden and I still have them and all their progeny except for dozens given away. Some years later I made the mistake

of putting a *Rubus arcticus* into my rock garden, and have had to practically tear the whole thing apart in a vain effort to get rid of it. Two species grow here, *R. arcticus* with trifoliate leaves, and *R. stellatus* with three-lobed leaves. The flowers are almost magenta and practically identical for both species. It is commonly known as Nagoon-berry, and if one can find enough of them, the berries make a delicious jam or jelly. Another real invader is *Campanula rotundifolia,* Alaska's commonest bluebell, or harebell as some call it. I planted it at the top of the rock wall at the corner of my rock-garden, and while its mass of blue bells and constant blooming habit is a delight, trying to keep it from taking over the whole garden, is not.

The iris was planted at the corner of our yard, where it still grows along with the grass that came with it. The children ran over it constantly, cars have driven over it, cows have grazed on and over it, but it still blooms every year. I will have to admit that the blooms are getting a little smaller and fewer, so something will have to be done soon.

The shooting-stars have been put into various situations. They make too rank a growth in good soil, thus losing their daintiness, so should be given a very lean diet. On several trips in recent years I have found what I believe to be *Dodecatheon frigidum;* have dug it carefully but without success, unless a couple of tiny ones I put in last year will survive. Why is it so much more temperamental than *D. macrocarpum* and others? Of course, it is found usually at much higher altitudes. Anchorage is little more than a hundred feet above sea-level, and yet many of the alpines found at three or four thousand feet altitude do not seem to resent the shift, possibly because they still have relatively cool conditions. If we have a heavy enough snowfall to keep them well covered they 'come through' well enough.

My first rock garden was built by utilizing a corner of one of my perennial borders. I first excavated to a couple of feet, threw in plenty of cinders and coarse gravel for drainage, then mounded up the top-soil I had taken out of the bed, after mixing it with plenty of leaf-mold, peat, coarse sand and ground cinders (I put them through the compost grinder). I had no very large rocks, so I'm afraid my efforts are very amateurish as rock-gardens go. However, it has been a good home for several years for *Dryas octopetala, D. integrifolia, Cypripedium guttatum, C. passerinum, Anemone richardsonii* which, incidentally, seemed to come from nowhere as I hadn't planted it! — *A. narcissiflora, A. parviflora,* the earliest of all to bloom, *A. multifida,* sometimes rose, sometimes blue on back of the sepals, *Caltha leptosepala,* the white mountain marsh marigold, *Saxifraga bronchialis, S. caespitosa,* and *S. tricuspidata; Campanula lasiocarpa,* a tiny plant with large bells, varying in color from pale to deep blue; *Silene acaulis;* various pussy-toes, some pink toes, some white, grown mainly for their silvery mats of foliage; *Myosotis alpestris,* Alaska's Territorial flower for many years, and now our official State flower—dark blue and non-aggressive.

Andromeda polifolia does very well and blooms, but grows very slowly, possibly because it does not have the right soil. A tiny trailing raspberry, *Rubus pedatus,* has been quite difficult for me to establish. I have always cut some of the rooting runners instead of getting the main root. The dainty flowers are white and the berries a bright red tiny raspberry. They also make a very good jelly — if enough can be found!

Linnaea borealis really 'takes over' and occasionally has to be restrained from smothering my one and only *Lewisia rediviva* and other small plants. One of my pets is *Loiseleuria procumbens,* the alpine azalea, a real treasure to anyone who loves the wee ones as I do. My first plant of this was gotten about ten years ago; is now only about five inches across at the widest point, but has been

transplanted so many times it is a wonder that it is still alive. It blooms every year, the tiny rose-red blossoms hardly discernible to the casual observer. Last year I gathered another specimen of this tiny evergreen shrublet and made cuttings which I hope will root. Another favorite of mine is *Luetkea pectinata,* commonly called Alaska spiraea, one of the easiest of all wild plants to establish —at least it has been for me. It is sometimes hard to convince visitors to the garden that it is not one of the saxifrages as it looks so like one, with its finely-cut mat of foliage and heads of fluffy, creamy-yellow bloom. It makes an excellent, slow-growing ground cover. If you are in need of a rapidly-growing type, try *Veronica tenella,* but don't let it go to seed or you'll find it everywhere. It is really an attractive plant, with crisp leaves and short racemes of tiny blue flowers.

I have tried to keep several of the pyrolas without much success. *Pyrola grandiflora* is the nicest, I think, with its large pinkish-white flowers; *P. asarifolia,* a deep pink, is somewhat less common around Anchorage, but can usually be found in woods, as can *P. chlorantha* and *P. secunda* with green flowers. *P. minor,* a deep rose-red, seems to be quite scarce. *Moneses uniflora* lasts only a season for me. I am going to experiment with seeds of this one. *P. secunda* is very easy to transplant, and persists with no care in a rather isolated spot at the northeast corner of our house, which I reserved long ago as a temporary home for wildlings until I could find a better place for them. Some, including *Cerastium alpinum, Fritillaria camchatcensis, Smilacina stellata,* several small ferns as yet unidentified, a wild blueberry which has most beautiful early spring and fall coloring but no bloom, several saxifrages, *Viola langsdorfii* and some smaller viola species, *Zygadenus elegans, Heuchera glabra, Parnassia palustris, Mertensia paniculata* and *Geranium erianthum* are still existing here. I keep planning to move them to better situations, or at least to give them better soil, but years go by and they are still the neglected orphans. Last summer I was greatly surprised to find, in this forsaken spot, three shoots of the saprophytic coral-root, *Corallorrhiza trifida,* popping through the heavy soil. I had seen it only once before and had collected that specimen to dry. I'd heard it was one of the 'impossibles' so didn't attempt to transplant it, and here was one coming entirely unannounced. Always so many surprises with wild things!

I recently collected plants of a white form of what I believe is *Mertensia paniculata,* a really beautiful plant. I have not had it identified as yet, but I have pressed specimens in my small herbarium. A neighbor of mine, whose husband is a 'bush pilot' operating in all sorts of out-of-the-way places, gave me seeds of a white geranium her husband had collected. From these I have five nice plants, all with white flowers, which leads me to believe it may be a different species, but it has not been identified either.

A really precious plant is a tiny poppy, *Papaver alboroseum,* sometimes called *pygmaeum.* It was first given to me years ago by an old-timer who had done quite extensive collecting of wild plants, and it was not until about three years ago that I found it in the wild, growing in heavy gravel of an old river bed. It has deeply dissected blue-green leaves and pale pink petals, the whole plant usually not over 3 inches high, and somewhat sprawling. It hybridizes with the Iceland poppy but the plants can be readily distinguished by their leaves before they bloom. The hybrids are very nice but have always been yellow.

Mimulus guttatus is a very desirable plant with bright yellow, fragrant bloom, found usually alongside mountain streams but growing easily and self-sowing in ordinary garden soil. It seems to be an annual for me.

Cerastium maximum we found growing beside a stream bed near the Canadian border. It was a stranger to me, and none of our botany group here had

ever seen it either. It must be rather scarce as we did not find it anywhere else on the trip. The plants grow to about a foot high; the blossoms are an almost transparent white, with a sort of raggedy look and are about an inch and a half across. It sets a lot of seed and I hope won't get to be a nuisance.

Wild plants that I have put into other parts of my flower borders because they are too large or invasive for my very small rock garden, are *Aquilegia formosa, A. brevistyla* (tiny blue and cream blossoms), *Geum calthifolium, Arnica latifolia, A. cordifolia, Penstemon procerus,* a rather decumbent plant with whorls of tiny dark blue flowers, not too showy, and *Aster sibericus,* a real invader. *Polemonium pulcherrimum* is a delightful edging plant as it will bloom almost all summer if the seed pods are picked off. The tall form, *P. acutiflorum,* has disappeared from my garden and I haven't tried to get it again, although it is a nice species. The aconites, delphiniums and lupines are all easy to grow, as is the twisted-stalk, *Streptopus amplexifolius.* The children used the berries of the latter to make mud-pies. Of course, we always have plenty of the tall fireweed, *Epilobium angustifolium,* and the dwarf and much more desirable species, *E. latifolium,* can be easily found.

Menyanthes trifoliata, a true bog plant, lives, if not too happily, alongside my garden pool (?)—an old galvanized wash-tub sunk into the garden bed and haphazardly camouflaged with flat stones around the rim. The buckbean gets no water from the pool except for the overflow when the hose is used to fill the pool; nevertheless it has lived for several years and even blooms sparingly. Keeping it company at the foot of an old lilac bush are several plants of the small northern bog orchid, *Lysiella obtusata,* and its larger cousin which I think is a species of Limnorchis. They seem to have forgotten their natural habitat of the bogs and tundra. Each spring I feel sure they will get disgusted with the plain old garden soil I have given them to live in and decide to call it a day, but so far they pop up each year and send out their spikes of tiny green flowers. Certainly not showy—no one but I knows they are there. During the summer they are smothered with other plant growth but they don't seem to mind.

The pool itself contains a plant of *Calla palustris* in an up-ended concrete block. Does very well, too. I tried a *Nymphaea tetragona* but it did not live over winter.

Two summers ago I was forced to build another rock garden as the old one is overflowing. It has much the same exposure as the old one but is somewhat shaded in winter by the greenhouse which helps to hold the snow. The soil is nearly all peat and sand, with a small portion of topsoil. Here I have put my one tiny specimen of *Kalmia polifolia* (not too healthy looking), several *Phyllodoce glanduliflora,* the yellow heather, the purple *P. empetriformis, Cassiope stelleriana, C. tetragona,* loiseleuria, *Arctostaphylos uva-ursi, Cornus suecica, C. canadensis,* and *Geum rossii,* a lovely plant with pinnate leaves and bright yellow petals. *Sedum roseum* is quite a common plant but an attractive one, with its blue-green leaves and heads of rosy-purple; *Saxifraga hirculus,* a bog-loving species, has quite large, bright yellow flowers; *Corydalis pauciflora* has purplish-blue corolla and long spurs; *Romanzoffia sitchensis,* a saxifrage-like plant, blooms quite early with myriads of small white flowers. Scattered about in rather a slap-happy fashion are several species of saxifrages not yet identified, one small clump of *Sisyrinchium littorale,* the blue-eyed grass; several tiny *Primula cuneifolia,* inch-high, bright purplish pink; an almost-as-tiny *Arenaria alpina* which is smothered every spring with its white flowers; and a *Diapensia lapponica.*

Here, also, are *Gentiana platypetala,* our most beautiful gentian with large brilliant blue flowers, *G. glauca, G. douglasiana,* a tiny white one from sphagnum bogs; several species of Arnica including *A. lessingii,* a nodding one covered

with brown hairs; another very attractive one makes a mat of shiny green leaves and sends up masses of bright yellow daisies, two inches or so broad and six to ten inches in height. It seems to be a very easy plant, but if too wet has a tendency to rot.

I have had *Rhododendron lapponicum* for several years but it has never bloomed. It was dug with a large clump of grassy sod and I'd never had the courage to try to separate plant from grass until last summer. I'm hoping that this will encourage it to bloom. Mixed into the same clump were several *Dryas integrifolia* and an unidentified species of Saussurea.

In several spots throughout the yard I have nursery beds for collected specimens. Here they are kept until I am quite sure that they are going to survive, at least for a time. In these beds now are *Penstemon gormanii,* rich blue with a rosy flush, two very dainty erigerons, one blue, one white; a wild gooseberry about three inches high; *Linum lewisii,* the alpine thalictrum, *T. alpinum,* several arnicas, a senecio or two, several other composites as yet undetermined, and *Gentiana algida, Silene repens* and *Lychnis apetala.* I try not to disturb them too much when removing them to permanent quarters as I like to save as much as possible of the original soil. Who knows, maybe something entirely new will sprout? As I said before, wild plants are full of surprises.

MEETING OF THE NEW ENGLAND UNIT

DOROTHY STILLWELL, *Woodstock, Vermont*

ON MAY 17 members of the New England group met at Mr. Will Curtis' "Garden in the Woods", South Sudbury, Mass., to admire his beautiful garden at its springtime peak.

After a picnic lunch, Ruth Manton, Chairman of the Unit, presided at a business meeting. Regrets were expressed at the death of Mrs. Beatrix Ferrand, long a member of the Society. She had been interested not only in rock plants, but in landscaping and horticultural work. A check was received from the Maine subgroup, which has been disbanded. It was reported that the New England Group has 97 members. Three round robins are in circulation, two of which are limited to New England; the third, containing fifteen members, goes across the country in Zone 4 of plant hardiness. Thanks were given to the retiring Secretary-Treasurer, Miss Madeline Harding, who has served faithfully for eight or more years. Dorothy Stillwell was elected to the office.

Mr. Curtis gave a most interesting talk. He emphasized the value of everyone's writing short articles for garden magazines, dealing with personal experiences with plants. He then mentioned ten of the most useful and valuable plants for the rock garden: white rhodora; the white form of *Rhododendron vaseyi; Spiraea lucida; Spiraea japonica* 'Rosabella'; *Gaylussacia brachycera; Epigaea repens; Waldsteinia fragarioides;* white-fruited partridgeberry; shortia; pixie moss.

Robert Stuart auctioned off the plants brought for the sale.

It is expected that a fall meeting will be held, with election of officers and a speaker.

1959 SEED EXCHANGE

Contributions to the 1959 Seed Exchange should be sent, as usual, to Dr. A. R. Kruckeberg, Dept. of Botany, University of Washington, Seattle 5, Washington. Please send them at once, if possible: they must be in Dr. Kruckeberg's hands by November 15 if they are to be included in the list.

WILD FLOWERS IN THE OREGON COUNTRY

DOROTHY B. MARSHALL, *Portland, Oregon*

ANCIENT GAUL may have been divided into three parts, but the state of Oregon is far ahead of that. Geographically, geologically, climatically, and in consequence botanically, there are several very different areas or belts; in fact Dr. Peck, in his "Higher Plants of Oregon", lists nine sections. Of course for practical purposes that number can be cut somewhat: adjoining sections merge to some extent, and certain species may grow in widely separated districts which have the same conditions. We believe the following divisions adequate to cover the different types of plant associations:

First, the narrow coastal belt, the Coast Mountains and the river valleys in the northwest, which have much the same plants, those expecting a rather humid atmosphere.

Second, central and eastern Oregon areas, usually somewhat mountainous, which are more or less wooded with yellow pine or oak.

Third, semi-arid eastern Oregon sagebrush country, in which one finds delightful small flower gardens in May or June that are dried to dust in the summer. The dryness here is due to some extent to the soil conditions.

Fourth, the southwest, which includes the Siskiyou Mountains where plants of the north, California and east of the Cascades merge with species indigenous only to that area.

Fifth, the higher Cascades, with their Arctic-Alpine and Hudsonian zones.

Finally, the Blue and Wallowa Mountains in the northeast. This does not differentiate the Steens Mountains of the southeast, which in general has a mingling of flora similar to that of the Blue Mountains, the Rockies and the sage plains.

As a result of the generosity of Mother Nature, Oregon gardeners have a wide list of endemics with which to experiment. Some of these plants the propagators have taken and "improved" until their own native hillsides would not recognize them. Others I think have been neglected or overlooked, and as the logging industry, grazing and highway construction ravish our flower fields, we must try to rescue certain species, or they will disappear entirely. *Cypripedium montanum* formerly was not uncommon throughout the state, but now is apparently quite rare. Of course some species decline under cultivation, or refuse cultivation completely, though when a fine flower does not flourish in our gardens I keep wondering just what condition it cannot tolerate. I am convinced that there is much work that could be done along this line, which would pay off. Not all good new plant material may be from Tibet.

In western Oregon the approaching spring is heralded by an item in a local newspaper about someone finding a trillium. Really, winter may still be very much on hand, but everyone smiles a bit, and the rabid gardeners take a look in the wild corners of their gardens to see if there really is green furled foliage pushing up through sodden leaves. At about this time, in the woods little plants of *Synthyris reniformis* will be showing pale lilac heads. It may well be several weeks before the erythroniums open up. Then the buds of red currant, *Ribes sanguineum*, will be bursting, and we know that on that very day the humming birds will arrive, as they dote on the currant. Then it is that we know that spring has arrived, little yellow violets, spring beauties, and all.

With us, all of these are happy in gardens, preferring semi-shade at least. *Trillium ovatum* seems to need no care at all, and will seed itself, while clumps will increase in number of stalks. If you are making a collection, get *T. sessile*

Photos by Earl A. Marshall

A sheet of *Lutkea pectinata* growing in the Cascades (p. 112)

also. In general it is not as showy, but is interesting, with the short necks and big collar of leaves. We have had *T. petiolatum* from the Blue Mountains of the eastern part of the state, but it does not deign to flower, which is not too disappointing, as it is not particularly attractive. *Synthyris reniformis* is smaller and in general not as good as *S. stellata,* or whatever they may call it now, from the Columbia Gorge. More about it later. The yellow *Viola glabella* is, if anything, too intrusive. It is easily controlled, but I find it difficult to be too hard-hearted with such sweet little rascals. *Dentaria tenella* the pioneers called "spice flower" from the spicy flavor of the little tuber. It is not a subject for show, but for naturalizing in a wild garden it is worth a small corner.

Before the erythroniums in Portland are out, it is time for a day's excursion up the Columbia River Highway to east of the Cascade Mountains, perhaps about seventy-five miles. It may still be cold, and most certainly will be windy, though there may be sunshine from the town of Hood River on. The white dodecatheon and *Dicentra cucullaria* will not as yet be in bloom on the cliffs near Multnomah Falls, but from there on all eyes should be on the rocky moss covered hillsides, watching for *Synthyris stellata.* A good clump of this can be spotted from the car at 50 miles per, it is that showy. Why it should not be cultivated more I cannot understand. Perhaps it has been tried and found of little interest because it is too easy of culture. It has a neat habit, is very early and is not intrusive, and has a good lavender color. It should be able to withstand rather low temperatures; possibly it would be discouraged by summer temperatures in the eastern states. For us it has been an excellent garden subject. Give it good drainage; that is a rule for most endemics, I find.

Dodecatheon dentatum is lovely in a shady spot, and will take to a good loam, though its habitat is on a mossy north-facing cliff. *Dicentra cucullaria,* commonly called "Dutchman's breeches", is a charming picture when in flower, with the little cream trousers hanging on the stalk above the fine feathery foliage. It blooms and is gone in a matter of weeks, so is easily lost in a garden if not well marked.

An exploratory stop should be made at the cliff called Mitchell's Point, a few miles below Hood River, to see if *Douglasia laevigata* is showing up. It selects the most inaccessible cracks on a precipice for its home—fortunately, for such is the charm of this tiny pink darling that otherwise it would be pilfered to extinction. In a garden it is not easy for an amateur, as it is accustomed to a home where its roots can strike deep and strong, while its head is among frequent swirling clouds. At the same stop also can be found *Romanzoffia sitchensis*. This appears at first to be another of the small saxifrages, but if one stops to examine it, he will find that the petals are united into a tiny trumpet. It will make itself at home in a shaded dampish corner, and give a nice little mist of bloom. As the pods start to mature some of them are likely to form little plants, the youth-on-age business.

On the other side of the Cascades one finds a new flower country, with hillsides in the spring painted yellow with buttercups, meadows in blue or purple, and the whole dotted with the small white flowers of saxifrage or lomatium. The mud flats which will later be baked hard are now a sheet of *Sisyrinchium douglasii,* which carry the country name of "grass widows" (why widows I never could imagine). If they are put into my garden here they will give a few purple bells the first year or two, then rather lose interest.

On the tumbled rock slopes are huge plants of *Leptotaenia purpurea.* I have never tried to tame this, but it is indeed handsome, with its soft sage-colored, fine foliage, and showy lavender flower heads. This is an example of a large plant which is not coarse. Among the rocks will be yellow parsley in variety, and eriogonums. Eastern Oregon is a country of eriogonums in many species and varieties. *Fritillaria pudica* is also wide-spread, and is not choosy as to its situation—that is, in the wild. I have dug it from among rocks, and from the fine silt of wheat fields. Frankly I have collected it many times, carefully keeping the funny little bulbs intact, and have planted them among rocks, in the wild garden, and in pots, with precious little luck in all situations. I have heard of no one who makes them flourish for any length of time. They are so charming that I shall continue to waste effort on them. Of course all these plants from the eastern part of the state expect much sun, and in summer a good baking. They grow either among rocks, in rocky soil, or in very fine porous dust-like soil.

Another sweet wilding is lithophragma, which grows not exclusively in this area, but in no place else so extravagantly. Perhaps it is not as appropriate for cultivation, for, like the dentaria, it is not showy, but here I have seen road banks turned to a lovely blush pink with the host of tiny flowers. Both dentaria and lithophragma tolerate some shade, such as that of an oak grove. Here also, near little rivulets or in damper spots, well drained, one may find yellow mimulus and the rose-colored *Dodecatheon poeticum.* This species of shooting-star, by the way, I have not found as satisfactory in cultivation as some of the others—for instance, *D. puberulum,* which seems perfectly satisfied in our home garden.

The crowning glory of this spring show is *Erythronium grandiflorum.* They may not be the "grandest" species, but their yellow color and early blooming make them very desirable. Their home is mostly in oak groves, sometimes on north hillsides, and often they take shelter under poison oak shrubs! In cultivation give them good drainage and a bit of shade, but don't overdo it. As with other erythroniums, barring encroaching pests, a planting if once established will last for years, and even multiply.

A bit later in the spring the hills about here will be yellow with the little annual *Crocidium multicaule.* It may be only three inches high, at most six, a little gem of a gold daisy. A cultivated strain of this would be a fine addition

Easily grown
Leucocrinum montanum
(p. 106)

to a miniature garden or a rockery. Another interesting item that can be found occasionally on exposed hills is *Hesperochiron pumilus,* looking much like a strawberry bloom.

By May and June the lush grass of the meadows will be gaudy with balsamorrhiza, which often teams up with lupine and castilleja. None of these three would I recommend for gardens. The balsam-root is too coarse, the lupine comes in better forms and shades from nurseries or seed packets, and the paintbrush is practically impossible to grow. (If a competing gardener says he grows it, ask him how long it has been in his garden.) The effect of the three colors on the landscape—bright yellow, purple and scarlet—is exhilarating but not discordant.

There are several species of "wild tulips" or calochortus in the eastern part of the state, the most magnificent of which is *C. macrocarpus,* an aristocrat among wild flowers, but like some human would-be aristocrats inclined to go its own way, snubbing efforts to be happy for long among other plants in the garden. Someone, sometime, I hope, will be able to give us a variety or strain which will tolerate garden conditions.

When spring begins in the higher and more arid rocky parts of the eastern sections of the state, say in June, the near-desert will display some most interesting and intriguing species. They usually grow in colonies, and if one sees something colorful out among the sagebrush, it usually pays to stop, for within shouting distance there may be eight or ten sorts of little plants which look just right for the rockery at home. Just remember that this is your idea, not theirs; but it is always a challenge to attempt them, for at times it does pay off.

There may be dwarf phlox, dwarf lupine, very small blue larkspur with scanty foliage, perhaps castilleja, aplopappus or other Compositae, low plants of erigeron sometimes with pink, white or lavender rays or sometimes with just funny yellow buttons, and usually dainty pink clarkia and penstemon. If you are lucky you may find the magnificent big blue *Penstemon speciosus,* which has been particularly frustrating to us. Of course one of the most interesting flowers is *Lewisia rediviva,* which looks like a small stray bloom of waterlily, out on the rockiest flats, where its thick red roots run between the chunks of basalt.

This, of course, was named for Captain Meriweather Lewis, and is the most widely spread of the genus. The Indians used it as food, but as the flavor was not all that could be desired, the whites dubbed it bitterroot. Specimens were sent to England, where, I have heard, the next year they were soaked and planted, with success. It is not a difficult plant to grow. I have best results by planting several roots in a pot of sharp rocks, with fine soil between. After blooming it dies down until the next winter, when a cluster of succulent green needlelike leaves appears, to vanish by flowering time. After flowering, I remove the pots to a hot sunny spot for a summer baking. In areas where the soil is especially light and sandy one may find *Leucocrinum montanum,* the sand lily, low growing with papery white flowers at ground level. I believe that this is being grown successfully in the east.

Observing the habits of some of these desert species makes me wonder how often a plant brought into a garden is tossed out as dead when it is simply enjoying its natural resting period.

There are a few cacti in eastern Oregon. Dr. Gabrielson recommends *Opuntia polycantha,* and I can report that in the natural rock piles it picks as a home, it can be very showy.

The plants of the forests of western Oregon are, as a whole, more amenable to cultivation, and I believe are often used in shaded corners. One of the finest, the common *Smilacina racemosa* or false Solomon's seal, with fragrant white spikes and red berries, is of course too large for a rockery. Disporum (fairy bells), clintonia, *Linnaea borealis* and *Cornus canadensis* are all acceptable. *Maianthemum bifolium* (false lily of the valley) I would not recommend, as it is likely to attempt to take over all the shade corner. *Dicentra formosa* is even worse with us in that respect. The little woods *Anemone deltoidea* with waxy white flowers is nice, though not easy to establish. *A. oregana,* usually with pale blue flowers, also is shy but lovely. Variations of these may be found, all charming, and once established they are reliable. *Thalictrum occidentale* with me is very well behaved, and I find it a good subject. It is a nice height, about ten inches, with dainty foliage and cunning fluffy yellow blooms.

The best of the Oregon wild flowers are the erythroniums, and of them all I consider *E. oreganum (giganteum)* the queen. It is a lovely cream with orange markings, often very large, and at times with three or even four flowers on the stalk. It is usually found in open woods or on north hillsides. You feel that here is a patrician, for there is such an air of grace and distinction, with the whorl of curled petals above the glossy leaves mottled with brownish tints. There is a lovely species growing on the western slopes of the Coast Range and along the coast, which is a glorious rich pink: *E. revolutum,* sometimes referred to as *E. johnsoni,* which I understand is really a variety of the former. After becoming established in the garden, they require no special care, except to keep heavy grass or weeds from overrunning the bed. Thy should have some, but not heavy, shade. They like good drainage, and we have found them growing at times among rocks, but this is not common. At times mice following mole runs may be troublesome to the bulbs, but this difficulty can be prevented by planting in heavy wire baskets.

With most of the land in western Oregon valleys under cultivation or in pasturage, flowers preferring open exposures are largely limited to fence rows and roadsides. As a whole, they are more delightful in the open than in a rockery. David Douglas, the plant explorer working here a hundred twenty-five years ago, was thrilled by great showy lupines along the Columbia. These have been taken over by the horticulturists and improved, as has the godetia. At times one may see beautiful pink sidalceas, very blue delphineum, and of course *Fritillaria*

Lovely and difficult *Phlox adsurgens* (p. 108)

lanceolata. Calochortus tolmiei the children gather as "Cat's Ears"; while we have not been especially successful with these, I believe it is not their fault, and I think they could be made more of. In marshy meadows with the buttercups and mimulus there may be camas; in fact, fields may be blue with them. Camas are happy under cultivation, but I care little for them, as after the first blooms come, the fading flowers make the stalks look shabby.

Dodecatheons are found throughout the state in damp situations. They are of many species and cross-species, and like phlox, iris, penstemon and some other genera, can be completely baffling to an amateur botanist as to the species. Like some other spring-blooming plants, the shooting stars in the garden should be well marked, as by midsummer they disappear.

Brodiaeas are common and varied in Oregon. I believe some species are being developed by bulb growers. They come into bloom in early summer and are interesting, but their foliage is scanty and they need companion plantings.

The Oregon flower which I believe is receiving the most attention at the present time, so far as the development of garden forms is concerned, is the iris. Several horticulturists have been working on these species, together with some California forms, with wonderful results. They interbreed readily both in the field and in the garden with delightful progeny, all except the little white *Iris tenuis*. This dainty plant is found only on the Clackamas River drainage in the Cascade Mountains. Once established in a garden it is happy to creep among the rocks. Don't feed it too much or it may become rather coarse in plant and leaf. I list it as a definitely desirable rock plant.

In the northwestern valleys the main iris is of course *I. tenax,* which in typical form is purple, shading perhaps toward plum at times. It is about ten inches in height, and seems to stand changes in location and climate quite well. Here and there in certain mountain areas one may find color variations, whether a fancy of its own—as the yellow *gormani* variety appears to be—or by crossing with another species, usually *I. chrysophylla.* To get the greatest thrill from iris one should visit the southwestern part of the state during the latter part of May, for it is here that the greatest variation of form and color occurs.

The Siskiyou Mountains, whose fringes touch California on the south, the ocean on the west, and the Cascades on the east, collect in their confines species from all sides and from eastern Oregon, then add several fine flowers found exclusively there. One key to the question of this diversification may be the complex and very different geological formation. It is one of the oldest parts of the state, geologically speaking. There are fertile valleys, but much of it is mountainous, through which rivers have cut extremely rugged canyons. As a whole the mountains have rather sterile rocky soil. The timber cover is varied but not heavy, and there is considerable shrubby growth of ceanothus, western azalea, and many other sorts. The flora is so diversified that an excursion there in the spring is always a long-anticipated adventure. What may not appear along the next side road!

First there are the erythroniums, lilac *E. hendersoni* with dark markings, and *E. howellii* and *E. citrinum,* which from the practical standpoint of the gardener are the same. The flowers of *Trillium sessile* are simply enormous, and occasionally vary in color to a deep maroon. I am not sure that the botanists have not decided to make them a different species. Here grows the precious miniature *Trillium rivale,* just the size for a protected pocket in the rockery. It has a curious habit of drooping the pointed seedpod to shove its seed into the soil. On rocky situations *Ceanothus prostratus* is common, lavender to pink to white. Don't ask me how to propagate it: I would certainly grow it if I knew how.

There are violets from early spring into summer. So far I have been far from successful with them also, even with the tiny *V. cuneata,* white tinged with purple, which grows in practically any situation thereabouts. The white swamp *V. occidentalis* is a fine large-flowered one, and *V. hallii* of the damp rocky spots is a charming bicolor purple and yellow with finely cut foliage. There are several other sorts also.

On rocky flats and hillsides one constantly comes upon *Silene hookeri,* which has a stout rootstock creeping perhaps a foot underground, from which are sent out threadlike rootlets and clumps of blue-green foliage, crowned by soft pink flowers with deeply cleft petals. In the garden I have planted heavy tap roots, also finer roots, and the next spring no silene appears. Yet one may see in its home area a field over which has been dragged a harrow. At the edge of the field, where the harrow was lifted, is a profusion of pinks which have sprouted from the fine roots. It is maddening! On the southern border of the state, if lucky, one may find *S. californica* with red, red flowers, having a habit somewhat more rambling than that of *S. hookeri.* This also is not easy to establish.

This is the home of *Phlox adsurgens,* the loveliest of the western phlox. My husband says that it grows near outcroppings of serpentine rock, and probably he is correct, as we have found it in situations in the Cascades in that type of soil. If it is content in your garden you will be envied, for in the spring it becomes a mound of glowing pink. The Siskiyous have two nice variations of familiar plants: one on vancouveria, the yellow *V. chrysantha,* which is not as rampant as *V. hexandra,* and *Dicentra oregana.* This has interesting bluish foliage and cream flowers. So far my experience indicates that it should be a desirable plant. We found it growing practically in a pile of rocks.

I would not venture a guess as to how many species of Brodiaea there may be in this country, but they are legion. I am ambitious to tame *B. hendersonii* or *crocea,* yellow types of the subgenus *Tritelia.* The most startling is *B. ida-maia* (or is it a *Brodiaea* now?) which produces its flowers, looking almost exactly like a bunch of firecrackers, on the tip of a rather tall stem. In fritillarias, besides the more common species there is *F. recurva* with scarlet, almost orange lily-bells. There are also calochorti in variety, from large white-flowered types

Silene hookeri.
superlatively beautiful
but intractable (p. 108)

with dark spots to tiny opal-tinted cups which grow in situations which are wet in the early spring and bone-dry in summer.

The orchid family is also well represented in the Siskiyou country: calypso, epipactis, habenaria, and of course the most practical for the garden, the cypripedium. *C. californicum* is not at all uncommon in the darlingtonia swamps; while not as large flowered as some species, certainly it is worthy of space in a dampish spot, perhaps near a generous faucet. *C. montanum* here, as in other parts of the state—it is widely scattered—is not often seen these days. You may say it is not showy, unlike some eastern species, but it is a beautiful plant. Give it good loam, sharp drainage, and some shade. The slippers are pure white with long brown "ties", and are very fragrant.

For a rock garden enthusiast the best plants in the Siskiyous may be the lewisias of the *L. cotyledon* type. They grow on the higher rocky ridges and vary considerably in color or form, and if you are a species-splitter, in name. They may be grown easily from seed. They have good clean-appearing foliage in rosettes, and beautiful flower colors. They seem to thrive tucked between rocks, especially on a slope where the crown will not be rotted by stagnant dampness, though in the summer they appreciate some water. *L. oppositifolia* disappears after flowering, like *L. rediviva.* It, like most of the others, makes up for the small size of the blooms by producing flowers in panicles or heads.

On one excursion our family discovered in damp meadows drifts of bloom new to us, *Limnanthes douglasi,* and were surprised that it had a common name, "meadow foam". It is a pleasant little annual, well named. We were even more surprised to find it listed in English seed catalogues, although to local seed people and gardeners it seems unknown. *Mimulus cardinalis,* which is not uncommon on streams of southern Oregon, is cultivated occasionally, I believe. Zauschneria is also found on cliffs here, and often in our cultivated rockeries. *Delphineum nudicaule,* another scarlet flower, has become quite well known. *Eriophyllum lanatum* is much too common; in fact it is practically a weed in Oregon. However, along some of the streams in this mountain country grows a smaller form, so very

Yellow *Iris gormani* of northwestern valleys (p. 107)

woolly that its foliage appears almost white. I am ambitious to experiment with it.

There are several lilies found in southern Oregon, most of which are too large for a rockery. The exception is *L. howellii (bolanderi),* which seems to prefer rocky hill soil in its native land. It is usually not over fifteen inches high, and its trumpet flowers are a most unusual color, a sort of scarlet overlaid with purple, which is much more luminous than it sounds. Don't forget to give it good drainage.

The remote rocky ridges of the Siskiyous are, one can almost say, the retreat of *Kalmiopsis leachiana,* that small rosy flowered kalmia-like shrub. Here in the Portland climate it is not considered an easy subject, and should be placed where it is not exposed to too much hot sun. I have heard that there is a new variety out which is not as exacting.

Would you like your iris tall or dwarf, yellow, white or purple? They are all here, and in all combinations. The species found near the coast, *I. douglasiana,* grows in the garden up to eighteen inches high, with a somewhat spreading habit. Its foliage is coarser than that of other species, and the flowers are usually light purple, sometimes white—unless they are growing up one of the coastal valleys in conjunction with fields of *I. innominata.* There you could, if you are lucky, find a cream *I. douglasiana.* The type color of *I. innominata* is bright yellow. Its foliage is glossy, low and narrow. *I. bracteata* grows at its best in the vicinity of Waldo, an old mining town which has now disappeared. Its foliage is inclined to look unsightly at times, but it makes up for this by producing one of the finest of the western iris blooms, a lovely buff. *I. chrysophylla,* to me, is not up to the other species in quality, as the flowers, cream or white, are inclined to be of poor texture, but it varies too much to make that statement unconditionally. These species in the field cross wherever their areas overlap, with most interesting results. On the northern edge of this country there is a very vigorous form of *I. tenax,* rich purple in color. I understand that these iris are proving fairly hardy in other climates. They need decent drainage. Our first efforts with *I. bracteata* were not successful until it was placed at the top of a rock wall.

A calochortus of southern Oregon, probably *C. howelli* (p. 108)

These natives do not like transplanting, and if you must move a plant, try to do it in the late fall. They come readily from seed.

One plant which I find very useful is found, not frequently, in various districts of southern and western Oregon, usually in the mountains. It is *Polemonium carneum,* which has a rather spreading habit and bears inch-wide deep cream-colored flowers, occasionally pinkish. I really should limit this in the garden, as it seeds itself over-plentifully, but there is always some neighboring gardener who is willing to take its children.

The Cascade Mountains, besides their several snow-capped peaks, have numerous lesser summits from 4,000 to 6,000 feet high, where a somewhat different flora is found. Usually the crest is a rock cone upon which penstemon and various other rock-loving plants revel, notably *Penstemon rupicola,* which is a blaze of beautiful rose-pink in June. On cliffs near the Columbia River grows the big rose-colored *P. barrettae,* which has rather bluish foliage. Personally I do not admire this much, as it has a rather coarse appearance, especially if it has sharp drainage and an abundance of water in the garden, where it is inclined to overgrow. With us *P. cardwellii* seems to be the most satisfactory, as one can easily take cuttings from plants of fine color and large flowers, which do themselves proud in a garden. On these rocky ridges are usually found also sedums, wallflowers *(Erysimum asperum),* calochortus, alliums, eriogonums, perhaps phlox. In the mountain meadows and perhaps in the shelter of nearby trees grow the rhododendrons, both *R. californicum* and *R. albiflorum.* In some situations the pink-flowered *R. californicum* may practically form thickets, with blooms well over one's head. *R. albiflorum,* with its smaller waxy cream blooms, is very resentful of cultivation. Of course the meadows are brilliant with arnica, paintbrush, lupine and erigeron. Common is *Xerophyllum tenax,* not a rockery plant, but rather interesting in a wild garden, especially when it deigns to bloom. *Lilium washingtonianum* is not unusual in the higher mountains. Along the

stream banks grow mimulus, at higher altitudes pink *M. lewisii,* and perhaps dodecatheon if the stream spreads to a bit of marsh. These mountains are the home of beautiful *Erythronium montanum.* This species is usually not as happy in our lowland gardens as others, but if you can obtain it, it is worth trying, if only to remind you of high wide fields of wind-tossed pinwheel-like blooms. Just as the snow leaves the anemones come, *A. occidentalis* or *drummondii,* at first perhaps only a white bloom on muddy soil, but increasing in height until the second attraction is displayed, great plumy seed heads.

As one approaches timberline, the alpine parks become great flower fields in the early summer, glowing with lupine, potentilla, castilleja, valerian and erigeron. Along the little streams grow dodecatheon, pink mimulus, and caltha, but especially the mimulus. Above timber are found fragrant little *Penstemon menziesii, Phyllodoce empetriformis* or pink heath, and perhaps *Cassiope mertensiana* or white heather. Other typical plants are dwarf *Phlox diffusa, Spraguea umbellata* which every mountaineer knows as "pussy paws", *Lupinus lyallii,* and *Lutkea pectinata.* These, the highest of growing green, creep up the exposed ridges where the snow leaves first, while a forbidding glacier in a canyon may be close at hand.

In the northeastern corner of Oregon are the Blue Mountains and the Wallowas. Frankly we have not spent much time in this area, either being in after the peak of the flowering season, or so early that hub-deep mud prevented our exploring as extensively as we should have liked. However, I do know that there are flowers in plenty there; some species which prefer the pine timber country, and others which are found only at high altitudes. Some species are like those of the east slopes of the Cascades, usually with slight differences; others are of the Rocky Mountain type. A few, like the much sought *Primula cusickiana,* are found only here. There are several species of dwarf willows in the Wallowas. In the general area are several beautiful species of mertensia, the best of which is *M. longiflora,* a small blue-flowered gem of a rock plant. It is fussy, and he who can make it thrive in a garden is lucky indeed. It has an independent habit of sending its deep roots beneath other rocks to a pocket beyond where it was planted.

There is a clematis, *C. douglasii*—or is it now *C. hirsutissima?*—which is common here. It is a plant rather sprawling from the crown, and having dark purple flowers which the children call "old man's pipe." In seed it appears much like *Anemone pulsatilla.* Upon one excursion we found a beautiful pink geranium in its prime. With collector's luck, however, in Portland it faded to a sad pink.

Yes, there are flowers in plenty of the Wallowas, sisyrinchium, *Erythronium grandiflorum,* dodecatheons, phlox in variety, violets, yellow-flowered currant, alliums, gentians, lupines, calochortus, *Lewisia columbiana* in quantity, eriogonums—well, just come and see them there, come and see the flowers in all sections of the state.

TWO ARKANSAS PHLOXES

The two species of Phlox so attractively described in the April number of the *Bulletin,* page 60, are unfortunately misidentified. The one called *P. subulata* is actually *P. bifida,* a species too little known in the rock garden. The one called *P. maculata* is really *P. pilosa* variety *ozarkana,* which would be highly desirable if anyone would propagate and place it in the rock garden trade.

— EDGAR T. WHERRY

SOME COAST RANGE PLANTS

RAY WILLIAMS, *Watsonville, Cal.*

I HAVE BEEN to the hills, not once but twice, and can't say I was wildly successful for I collected more dust than plants; but the trips were highly satisfying just the same and since I am writing of native plants I think it best to make it clear that I intend to write of my home territory, for there is ample material growing in the three counties of Santa Cruz, Monterey and San Benito—all adjacent to Monterey Bay and containing within their boundaries the three well defined sections of the Coast Range, Santa Cruz, Gabilans and Santa Lucia Mountains.

All three ranges contain a similar flora but different in its distribution. Some plants common or even predominant in one may be scarce or entirely lacking in the other. All three ranges are quite low in altitude as mountains go, but since one must remember that ocean depths are often tremendous a short distance off shore, those mountains are really a great range standing neck deep in the Pacific. The terrain, especially in the Santa Lucias, is rugged indeed and the coast line, I feel sure, is one of the wildest and most beautiful in the world. The tops of those mountains are almost yearly covered in snow for a few days at a time, seldom more than a week and usually only a day or two following a winter storm. Whether or not this insures hardiness in Eastern gardens for the plants which grow there I do not know. The prevalent frosts and occasional light freezes of lower altitudes, I am sure, would not.

I will begin with a few plants found nearest home. *Pickeringa montana* is a shrub found in many places in California, but from my own observations, nowhere very prevalent with one exception, an area covering a few square miles at an altitude of approximately 2500 feet on Loma Prieta, the central peak of the Santa Cruz Mountains. There are quite probably other places where it grows equally well but I have not been over its entire range. It belongs to the Leguminosae and is evidently an extremely long-lived plant. This thorny, rigid, hard-wooded shrub grows 3 to 6 feet high and sometimes higher. The foliage is somewhat sparse and light dusty green in color, the individual leaves being oval and about one half inch across. In spring the shrubs are covered with sweetpea flowers of brilliant red with an occasional white or pink form among them. They have the peculiarity of setting almost no seed. I have spent hours only to find a scant dozen pods among acres of plants that had produced millions of flowers the preceding spring. I have searched vainly for seedlings in spring and early summer. There is the possibility that the few seeds produced germinate only after a chaparral fire. The seed pod itself is a curiosity, being transparent for the first year at least, the one to four seeds which they contain being plainly visible, but this transparent pod is extremely tough and it is no easy matter to open it. The scarcity of seed, the difficulty of propagation from cuttings and its exacting demands of cultivation forbid its use in gardens. I am lucky in possessing one small specimen, an already growing root thrown out by the road grader clearing the road of land slides after the winter storms. The entire area where it grows is sandstone, often with fossil sea shells imbedded in it. Geologists tell us this range has been submerged not once but twice in times long past. The plant life in this sandstone area is exceedingly interesting but contains almost nothing for the rock garden.

The companion shrubs with the pickeringia are *Dendromecon rigida* and *Arctostaphylos canescens,* both reaching four feet and sometimes higher. The den-

dromecon is an extremely beautiful plant blooming for nearly half the year. It sets quantities of seeds but one must be there at the right time for when ripe the pods open with an audible snap and scatter them far and wide. The flowers are brilliant yellow poppies an inch or more across and very freely produced. Arctostaphylos of several species grow on this mountain but *A. canescens* is perhaps the most prevalent in the sandstone and the most beautiful, a gnarled and tangled shrub with trunk and branches of burnished mahogany, oval leaves of silver gray, and weighed down with silvery pink bells in early spring.

This sandstone country is on the southern exposure of the mountain, and being mostly above the fog, receives the full force of the sun. The soil becomes blistering hot and seeds must surely be thoroughly roasted by summer's end. All seem to benefit by heat treatment before sowing. Those three shrubs, although predominant in this particular area, are not all that grows in the sandstone. *Eriophyllum confertiflorum* is common, and while its gray foliage and achillealike flowerhead of orangey yellow are quite attractive at times, it can be quite weedy too. *Helianthemum scoparium* var. *vulgare* is a beautiful little plant making almost leafless little shrublets, usually six to eight inches high and spangled with bright yellow rock roses. Its open tangle of bright green leafless stems and bright yellow flowers are most attractive but it does not often persist long if subject to summer watering. It grows in hot sterile sand and seems to thrive where little else grows.

The Santa Cruz Mountains mark the southern end of the redwood belt. The redwoods do not, on Loma Prieta at least, ascend much over the 1000 foot level. Here the tan oaks *(Lithocarpus densiflora),* madrone *(Arbutus menziesii),* and in places Douglas fir *(Pseudotsuga taxifolia)* make a mixed forest. Higher up intermingling with the chaparral are colonies of knob-cone pine *(Pinus tuberculata),* those often growing in such dry rocks as to become natural Bonsai.

The wild iris are plentiful in the Santa Cruz Mountains, on this the southern side of the range, *Iris macrosiphon,* or what I have always considered *Iris macrosiphon,* is the commonest variety. The foliage is usually short and sparse, nearly always growing obliquely rather than rigidly upright as in Iris missouriensis, and the flower color is cream or sometimes tan or even pale yellow, always finely penciled with chocolate veinings. I know of a colony of wild iris near Felton, only twenty miles away, where the flower color is a bewildering array of blues, lilacs, creams and purples, and those plants are quite dwarf and fine foliaged. I make no effort to identify them but suspect they are natural hybrids. Iris are to be found throughout the forest belt and ascend into the chaparral where there is sufficient moisture.

Fritillaria lanceolata is not an uncommon plant yet never very plentiful anyplace. It is always found in woodland, usually along streams in moist well drained soil and is likely to be found blooming away with no more security than a mossy pocket on a cliff overhanging a mountain stream. The foliage is light green and sparse and enhances the beauty of the flowers which are open cups of greenish yellow checkered with brownish red. A frequent companion of the fritillaria, but more often seen, is *Scoliopus bigelovii,* another of the Liliaceae which is sometimes mistaken for some kind of viola. This plant is nearly always found on steep rocky banks, dripping with moisture in winter but usually quite dry in summer. In early spring it sends up two or sometimes three leaves which lie flat or hang over the mossy rocks, among which it delights to grow. Those leaves are from four to ten inches long and two to three inches wide, dark green and mottled with brownish splotches. The flowers are not particularly attractive, almost colorless and have an unpleasant odor, but it is well worth growing for its leaves alone and once established in the garden will remain for years.

Clintonia andrewsiana is a common plant too and loves the same conditions as the fritillaria and the scoliopus but usually prefers the deeper soil of the flat shelves above the steep rocky banks which the first two are prone to inhabit. The soil condition is the same, rich and black with coarse crumb texture which means perfect drainage. It is often a striking plant with a rosette of shining, rich green leaves over a foot across. The naked flower stem twelve to eighteen inches high is topped with a half dozen or so red tubular flowers which produce bright blue berries later on. I have found it extremely difficult to gather seed of late years as the rapidly increasing deer population keep the native stands well harvested. They do not seem to bother the foliage, only the seed heads. *Cynoglossum grande* shares the same fate. This beautiful plant grows in the same area but ventures into drier and more open woodland than the others. With us it is never common and grows usually as more or less isolated specimens. I have never found it very plentiful anyplace and never in thick colonies. Its lax flower spike is usually 20 to 30 inches tall and of the most intense blue. The foliage, more or less heart shaped, is of typical borage texture, all basal, and never produced in such quantities as to overpower the flower spike.

The calochortus is the glory of California's bulbous plants and in our tri-county range I have found only three species. *Calochortus venustus* seems far the most common and wide spread of the true mariposa tulips but even this is scarce and hard to find. It grows in isolated colonies where the Santa Cruz Mountains merge into the Santa Clara Valley and in the valley itself, but has been largely crowded out by the plow and heavy grazing. The best stands are by the roadsides, stopping abruptly where it can be reached by cattle and entirely extinct in cultivated land. The average height is twelve to eighteen inches and at flowering time, which is May or early June, the scant foliage is already drying. The corm produces from one to six or more wide open tulips of varying shades of rose-pink marked at the middle of each petal with a maroon blotch and a fine peppering of the same color over the lower half. This mariposa I have never found very high in the Santa Cruz Mountains but in the Gabilan Range in San Benito County it ascends almost to the top of Mt. Fremont. *Calochortus luteus* is reported wide spread in its distribution over the state but is rare with us and I have some doubts that it is any longer plentiful anywhere. It is a glorious flower in any of its forms. The flower is from one and one-half to three inches across and varies from clear citron to deep yellow, variously marked with red-brown, sometimes a blotch and sometimes a transverse bar across the lower half of the petal and usually the accompanying peppering of the same color. I have found those only in small isolated colonies along Arthur and Uvas Creeks where the Santa Cruz Mountains meet the Santa Clara Valley. This section is good bulb country. Brodiaeas are in abundance. *B. coronaria, B. capitata* and *B. laxa* are plentiful and grow to larger size than in the many other places I have found them.

The bright pink *Allium unifolium* grows here too, a delightful plant which might well be mistaken for a brodiaea until one examines it closely and finds that it is truly an allium. It is found here a little higher up and not in grass land but in shallow ravines and ditches in the chaparral, moisture clings here longer than on the rocky ridges only a few yards above.

Penstemons are scarce or maybe nonexistent in the Santa Cruz Mountains but in the dry hills and mountains of San Benito and Monterey Counties *Penstemon centranthifolius* grows in great clumps, sending up a dozen or more spikes from a single plant to a height of two or even three feet, strung for nearly half their length with scarlet trumpets that supplement the gray-blue foliage ideally. Its balance of herbage and flower is so perfect that it can be used in the rock

garden where a plant half its stature might be rejected as too large. Its common name of Scarlet Bugler suits it well. It is always found in dry country either in short grass or open chaparral.

Penstemon palmeri is also of the inner coast ranges but is quite rare with us. I know it only from one station, near the New Idria quicksilver mines, 90 miles to the south and east of where I live. It grows there in dry rocky banks among the rough herbage of short chaparral. Why it should choose this one spot to make its home when there are miles and miles of apparently similar territory on all sides I do not know, but I have never seen it elsewhere. It is a beautiful plant with clean glossy herbage, sharply jagged and gray-green. Spires of tubby flowers of a shade of mauve all their own, set off with the bristling brown beard that lines the throat, make this one of the most beautiful of the penstemons. Mauve is often a drab color in flowers but there is certainly no hint of drabness in *Penstemon palmeri.*

Convolvulus villosus often adorns dry, rocky open places in the chaparral in both the Gabilans and the Santa Cruz Mountains, but I have never found it plentiful. Only two or three inches high, the little clumpy mats of silvery, furry, triangular hastate leaves are four to six inches across. The flowers are pale yellow or cream and not too freely produced. It has no invasive tendencies and now that I have it introduced to my rock garden my chief concern is to induce it to survive.

Dodecatheon hendersonii is one of our most attractive spring flowers and is quite common in the Gabilan Range and the surrounding foothills, also in some places in the Santa Lucias. I have never found it in the Santa Cruz Mountains. It grows best in light chalky soil often with solid rock only a few inches underneath. From the flat rosette of grayish-green leaves the flower stems sometimes ten or more inches high arise to bear three to six and sometimes more shooting stars in a range of colors from white to purple, always with the black stamen circle which give them their other common name, mosquito bills. It is not happy with summer moisture.

Another plant from the Mt. Fremont chaparral belt is *Salvia sonomensis.* Up there in the dry coarse sand it makes great rugs many feet across but only an inch or two high. The flower stems may be three or even four inches high and bear short spikes of pale lavender flowers. It spreads very slowly in the rock garden but stands summer watering very well. A pleasing, fragrant plant and a most useful one for a hard to water spot.

California has a seemingly endless array of annuals which paint the foothills of our ranges with streaks and splashes of vivid color, lupins, baeria (gold fields), layia (tidy tips) and a host of others. A few might persist from self-sown seedlings for a while in the rock garden but most rock gardeners do not bother to introduce them. However *Salvia carduacea,* the thistle sage, is well worth a trial in any rock garden with a dry sunny exposure. The plant has the appearance of a reduced Canadian thistle that has covered itself with a cobwebbing of pure white silk. The six to ten inch spike with whorls of bright blue salvias having deeply fringed lips are reminiscent of some orchids. It is of annual duration only and nothing more can be expected of it. This salvia is a plant of the dry inner ranges and never ventures near the coast.

Few gardeners show much interest in the umbellifers. Even Farrer called them an 'unlovely race', but I find them most interesting and some of them delightful although I must admit that I haven't been very successful in cultivating them. Lomatium has two species in our territory, both found in dry county and seemingly demand a thorough drying in summer. *L. utriculatum* is more or less common in light stony soil, growing in short grass. Its sparse clump of finely dis-

sected foliage is all basal and two to three inches in height. The nearly flat umbel of bright yellow flowers sits just above and may be three or more inches across. The plant is as attractive in seed as in flower. The stem elongates to six inches or more and produces a wide umbel of quite large seeds, each one marked with longitudinal bands of cream and purple *L. macrocarpum* is somewhat similar, but has grayish foliage and white flowers.

There seems no end of plants with garden value that adorn the Coast Ranges of Central California. I could not now write of all of them, even had I the botanical knowledge to identify each species when I find it blooming in the hills. My garden experiences with them has been most pleasant and while plants for the rock garden proper are not plentiful our natives are most valuable for the setting and background against which the rock garden is built.

SOME PLANTS OF THE SIERRA NEVADAS

MARGARET WILLIAMS, *Reno, Nevada*

HOW WOULD ONE describe a day in the Sierra Nevadas? Which day would you choose? From Reno, a limitless number of day trips can be taken, all equally interesting. While I have explored many spots, we have spent the most time in the mountains above Feather River and in a series of small valleys leading to Blue Lakes near Kit Carson Pass. The scenery is superb, the flowers are abundant, and besides, the fishing is good and that pleases other members of the family. Elevations in these areas vary from 6000 to 8000 feet.

One July day, as we drove slowly along the last ten miles to Blue Lakes, from the car window we counted 58 species of plants in bloom. This area not only has more varieties than any comparable area I've been in, but it has an abundance of most varieties. The Feather River country we explore is more primitive. It has many of the same plants, but also has a few plants not found in the Blue Lakes area.

Each succeeding trip to these favorite spots brings new surprises. It would be impossible to discuss every plant, so this article has been limited to a description of the plants in these two areas which fascinate me most, namely those which Jepson, in the "Manual of the Flowering Plants of California", groups in the Heath Family (Ericaceae) plus a primula. Other authors divide these plants into several families but these plants are sufficiently related to consider them together.

These plants characterize the Sierras to me and include not only some of the commonest and most abundant species, but some of the rarest as well. They range from shrubs to saprophytic herbs and include some of the most strikingly beautiful plants of the Sierras.

On any trip you might take to the eastern slopes of the Sierras you will find *Arctostaphylos patula,* green manzanita. Many hillsides will be covered by it, and, because of its uniformity of growth, from a distance will give the appearance of a grassy carpet. However, it often occurs in combination with other plants and grows in many varied situations.

This is one of the handsomest manzanitas. It is a diffusely branching evergreen shrub, three to five feet tall and as broad. The smooth bright green leaves are rounded and are about an inch and a half long. Most of the leaves stand vertically on the stems and there is no underside to the leaf. The bark is reddish-chocolate color, smooth and polished.

The pink flowers are in a dense terminal panicle about two inches long and can be found (according to the altitudes and season) from April to June.

The corolla is urn shaped and less than one fourth inch long. The flowers are followed by green berries which darken with age.

Less common is pine-mat manzanita, *A. nevadensis,* which is only found at higher elevations. The flowers are white, a bit smaller, and there are fewer flowers in a panicle. The plants form a rough mat on the forest floor, the main stems creeping or trailing, and branches stick up three to nine inches. Often the plants will creep across and mold themselves around rocks.

The snow plant, *Sarcodes sanguinea,* is the delight of all who chance upon it. It is probably the most spectacular plant in this group and is common under pine trees. This saprophytic herb has a thick, fleshy, scaly stem rising from six to twelve inches. The entire plant is brilliant crimson and catches the eye of the most casual passer-by.

The individual flowers of the snow plant face outward on short pedicels and are packed tightly together, filling up most of the stem. The campanulate corolla is 5-lobed and is about three fourths of an inch long and half an inch across. Each plant produces only one stem, but often several plants grow in a clump. Plants may even grow out of fallen logs. Snow plants can be found from May to early July depending upon the elevation.

Pine drops, *Pterospora andromedea,* is not as dramatic a plant, but none the less interesting. They can be found in more limited areas growing near snow plants in dense shade. They emerge from the ground several weeks to a month later than snow plants, and are usually found at middle elevations. The plant dies after flowering. The reddish brown dried stems of this saprophytic herb are often two to three feet tall and are sought after by flower arrangers. The many showy bell-like empty seed pods hang gracefully along the long stem.

Pine drops are very unusual in all stages of development. As the stem emerges from the ground it is quite fleshy and thick—it becomes more slender as it elongates. The beige stem is quite sticky and fuzzy and is beautifully marked with rose-pink vertical streaks. The globular urn-shaped white corolla is inconspicuous.

A carpet of *Pyrola dentata* var. *integra* can be found snuggled at the base of pine trees in many various places. The cream-colored flowers appear in August in a terminal raceme on leafless stems rising about six inches above ovate evergreen leaves. The globular corolla is less than half an inch across and faces downward. It has five distinct petals which curve inwardly. The thickish elongated style curves abruptly and hangs out conspicuously.

In contrast, *P. asarifolia* var. *incarnata* was found growing in a swamp. It has thinner round leaves and a less conspicuous style, but the same growth habit otherwise. However, it is distinguished by the color of its flowers which make them appear very delicate and graceful. They are waxy white, suffused with a dainty pink which deepens at the edge of the petals. Farrar describes it as "the loveliest thing in the race".

Chimaphila umbellata and *C. menziesii* can be found growing together in a few shady spots. They are dwarfs, rarely over four inches, woody at the base, with large oval toothed evergreen leaves about three times as long as wide. Farrar calls them "very lovely woodland fairies." The pink flowers of *C. umbellata* are shaped like those of pyrola but are more charming and graceful because the stigma is round and flattened and is on an inconspicuous style. The darling is *C. menziesii* with its five reflexed waxy white petals and ten sturdy stamens standing around the stigma like golden jewels in a tiny crown. Both plants are few flowered, and while the flowers are small, they are large in proportion to the size of the plants.

They flower in late summer and are usually found with last season's seed

pod persisting. The flat, round brown capsule is five-celled, opening from above. Pyrola has a similarly shaped pod but it opens from the bottom upward.

One of the most beautiful small shrubs in our mountains is red heather, *Phyllodoce breweri.* Red heather grows about twelve inches tall, the linear leaves are evergreen and are crowded on the stem. The showy corolla is bowl-shaped, about half an inch across, five-parted with recurving lobes. Each flower has eight to ten stamens which are long and conspicuous. The flower clusters are poised at the ends of the branches like bright rose-red froth.

An enchanting sight as we rounded a bend in the road was a tiny lake nestled between the trees lined with red heather in bloom. Plants were found in another spot growing in a large mass of moist ground.

That same mid-July day in a moist meadow *Kalmia polifolia* var. was in bloom. This is the only place this plant was found. This laurel is an erect shrub about nine inches tall with leathery evergreen leaves. The delicate pink flowers are delightful but the plants are few flowered and are not showy. The corolla is about three-fourths of an inch across, saucer shaped, five-lobed, with two pouches below each lobe. Each pouch holds an anther.

Blooming near the laurel were plants of *Vaccinium occidentale,* western blueberry, a deciduous shrub about eighteen inches tall. The pendulous white flowers are urn-shaped and are very small. The flowers are usually solitary and inconspicuous. I have never seen the fruit.

Rhododendron occidentale blooms at middle elevations in early June—while it is common on the western slopes of the Sierras, it is not common in these areas. It makes an elegant shrub, widely branching, about five feet tall here. The thin leaves are about three inches long and an inch across and are crowded on the stems. The creamy white corolla is funnel-form, and slightly irregular, about an inch and a half long. The upper one of the five lobes has a large yellow spot on it. The five long stamens curve gracefully upward. A dozen or so flowers make a showy umbel on the tip of each branch. It is truly as beautiful a shrub as any cultivated variety.

Ledum glandulosum, Labrador tea, is a less spectacular shrub. The leaves are about an inch long and half as wide and are olive-green and smell like shoe-polish when crushed. It is a neat, rounded shrub growing about three feet tall. The creamy white flowers are about half an inch across and are borne in a flat head, about one to two inches across, on the tips of the branches. The flowers have five distinct petals which spread flat, the ten stamens stand rather erect, giving a fuzzy effect. It grows in moist places and blooms in late July.

The view from a jeep road on a divide at about 8000 feet elevation is breathtaking. To the left, far below are three crystal clear lakes; one a meadow lake, one surrounded by conifers and the third rock-bound. To the right nestled in the rocks are twin lakes which appear to be miniature from so far above, but which are quite large. But one day in mid-July even more startling was a crimson streak on the edge of a nearby snow bank. Closer inspection revealed plants of *Primula suffrutescens.* The glossy green leaves on woody stems which hug the ground were, in many places, just coming through the snow. Within a foot of the snow bank the plants were coming into full bloom.

Several typical primrose blooms are borne in an umbel on a naked stem about six inches long, well above the leaves. The flowers are a glistening rose-red with a yellow eye and measure about three-fourths of an inch across. The primrose plants grew in a large colony on this steep rocky hillside and, in this location, while the plants grew among rocks, they did not come out of crevices of rocks as Jepson observed them growing.

A trip back several weeks later found these plants had gone to seed but

other plants had emerged from the snow and were blooming. That same day, farther along the road, *Leucothoe davisiae* was blooming along the bank of a tumbling stream and again in a mass on the shore of a crystal clear lake. It is an erect shrub, at least three feet tall, with evergreen leathery leaves which are about two inches long and an inch wide. The small bell-shaped flowers are nearly closed. They hang pendulous on short pedicels in an erect terminal raceme about three inches long. A white calyx fits like a little cap over each flower. The contrast between the satiny white flowers and the glossy green leaves is striking.

The elusive member of this group is *Cassiope mertensiana.* It should grow in the places I've been, but so far I haven't found it. It is reported to grow in many areas in the high Sierras. This year I intend to explore Desolation Valley west of Lake Tahoe where this white heather reportedly grows on a lake shore. Jepson reports it growing in granite rocks and clefts, 8000 feet to 10,000 feet, in the Sierras west and south of Reno. It is a diminutive tufted shrub, whose stems are crowded with short thick evergreen leaves. The small white bell-like flowers are borne on inch long stems in the axils of the leaves. It sounds like it is worth searching for!

Except for the Sierra primrose, all these plants grow in springy humusy soil in either deep shade or in meadows. Several grow almost in a bog. However, in most cases, the moisture is supplied by seepage from melting snow, and when that is gone, the areas dry out. There is very little summer rain, and snow doesn't fall again until after their growing season is over. I haven't tried growing any of these plants because I didn't feel that I could duplicate their growing conditions —instead, I do my collecting with a camera.

While none of the plants except pine-mat manzanita and Sierra primrose were found growing in rocks, particularly the chimaphilas, pyrolas, kalmia, and phyllodoce would be handsome additions to any rock garden. Farrar says *Primula suffrutescens* "is easy in cultivation . . . in warm sandy, stony, and well drained peat". Pyrola and chimaphila are harder to move and establish, he says, because of their "frail wandering root habit". Even *Sarcodes sanguinea* might be attempted from seed. Clay says "you might be lucky enough to see the fat, fleshy spikes of scarlet unfolding . . . some four or five springs after you had scattered the fine dust and forgotten it".

THE BUNCH GRASS FIELDS OF NORTHEASTERN OREGON

MRS. M. I. BYMAN, *Canyonville, Oregon*

IN THE FOOTHILLS of the Blue Mountains of northeastern Oregon, the bunch grass fields contain a host of beautiful flowers. Some of these are easy garden plants, while others have never adapted themselves to cultivation.

First to bloom is the little harbinger of spring, the most beautiful of all buttercups, *Ranunculus glaberrimus.* Hidden away under west-facing large rocks of the rocky hills along the rivers, on the first warm days their big yellow waxy faces peep out to greet us.

Next in line, following close on the buttercups, is the beautiful spring birdbill, *Dodecatheon hendersoni.* The flowers range from light to dark shades of red and very often a pure white one is found. When these are gone to seed and grass is well grown on the hills, we find that *Dodecatheon jeffreyi* has taken over the bird show. It has a sweet-scented yellow farina on stem and leaf, and the flower has a very yellow beak.

Along with the first dodecatheons blooms *Sisyrinchium grandiflorum,* the grass widow, beautifully ranging from dark purplish red to pink and white.

Then, generally about May 1, come the flowers of most beautiful *Fritillaria pudica,* which inhabits grassy shaly slopes, usually north-facing, where it can dry out in summer after seeding. Youngsters who gather the beautiful yellow flowers by the handful call them "crook downs".

Right along with the fritillary comes the most beautiful and cherished of all mertensias, *M. pulchella.* It usually has only two rough blue-gray leaves, between which hangs on a three to four stem a large cluster of bells of the most beautiful blue. It seeds hurriedly and dies down until another spring.

In the shade, growing in the leafmold from thorn and wild cherry trees along the creeks, is delicate *Dicentra cucullaria,* with white "britches" and delicate woodsy fragrance.

As summer approaches, the rocky hills are decorated with the short-stemmed blue larkspur, with large flowers for the length of stem, and among the bunch grass the wild gaillardia is showing its beautiful ringed face of yellow and dark red.

As we go higher up toward the Blue Mountains, we find the beautiful ladyslippers of *Cypripedium montanum.* Still higher, *Erythronium grandiflorum,* with yellow flowers, pops up among the vines of *Linnaea borealis* with little twin bells of pink in the leaf axils.

These are only a few of the wild flowers of the foothills of the Blue Mountains, but some of the nicest of them.

CALIFORNIA NATIVES IN THE GARDEN

VIRGINIA STEWART, *San Anselmo, Cal.*

OUR GARDEN IN coastal central California has accommodated with varying degrees of success plants from all over the world. Possibly the greatest challenge remains in growing those of our California natives which possess all the attributes of good rock garden material but lack the ability to adjust to garden conditions. I believe that one of the most common causes of failure is the fact that in the average garden, conditions are such that it is difficult to provide the long dry season during which much of our native flora goes completely dormant. However, for all the reluctant growers there is an equal number which is amenable to garden conditions, and it is of these that I shall write. Many would have been more permanent if our understanding of their requirements had been more mature, but the trials have been rewarding and we can always try again.

When we acquired our property, a portion of an old pasture, some years ago, there were a number of good natives which we managed to incorporate into our present garden. *Oenothera ovata* I treasure most, I believe, whether it grows as a single plant or in colonies. The leaves grow in a basal rosette, and they and the bright yellow flowers rise from the crown of the thick root. The flowers are held quite erect so that the plant has a trim and neat appearance, unlike many others of its clan. It grows on open hillsides near the coast, from central California north to southern Oregon. Unfortunately I have never been able to collect seed, a mystery I have yet to solve.

In early spring one of the first natives to bloom is *Dodecatheon hendersonii,* belonging to the family Primulaceae. There are about seven species of dodecatheon indigenous to California, ranging from the coastal mesas to montane regions of

10,000 feet. The flowers resemble those of the cyclamen, although in most cases they are smaller and more pointed, earning them the common name of shooting stars. *D. hendersonii,* the species which grows in our garden, forms good sized colonies when not disturbed, making a lovely garden picture where it grows mingled with the light and airy *Ranunculus californicus.*

To *Dentaria integrifolia* goes the distinction of being the very first plant of the year to bloom in our garden, in fact a small colony is blooming at the base of a rhododendron outside our door on this very dark and rainy day of January 8. The fragile white blooms belie their sturdy character, hence the name milkmaids or rain-bells. A deep rose form reportedly grows on Mt. Tamalpais northwest of San Francisco. Two other species, *D. corymbosa* and *D. macrocarpa,* will be given a trial in our garden some day, *D. corymbosa* because it grows five to eight inches high and should be nice in the moist cool spots in the rockery, and *D. macrocarpa* because, although similar to *D. integrifolia,* it has deep rose or purple flowers.

Another early blooming native is the lovely and unique *Arabis blepharophylla* which grows in small colonies along the rocky sections of the coast. From a distance this arabis has the appearance of a neat primula. The flowers are in shades of rose and subtly fragrant. Planted in the rock garden they make a handsome showing. A word of caution however: they are a gastronomical treat for snails and slugs and must be protected. Of the twenty or so arabis growing in California, this is the only one I have tried in the garden, but others may be worthy garden subjects also.

California iris are all, I believe, worthy plant material for the larger rock garden because of their ease of culture, manner of growth, and in most cases a long blooming season. The first to bloom in our garden is the ground iris, *I. macrosiphon.* The flowers are small, violet and fragrant, the foliage slender; a variety that grows northward, *I. m.* var. *purdyi,* has cream-colored flowers veined with purple. Almost simultaneously the taller *Iris longipetala* begins to bloom; being somewhat more robust, it is allowed more room. Later in the spring *Iris douglasiana,* with a wonderful range of colors from near white through cream, lavender, lavender-pink, blues with white blotches, smoky-toned purples, sends up an abundance of bloom for several weeks. *Iris hartwegii,* the Sierra iris, which grows up to an altitude of 5,000 feet, has failed us twice; it is a case of too much summer watering, of that I am quite positive. Our next plant will be isolated in a spot as far from the sprinklers as possible.

Belong to the family Iridaceae, the sisyrinchiums agreeable and charming have proven to be very permanent in our garden. Probably I should qualify that remark and say that two of the three have proven to be so, while the third, *S. grandiflorum* of the higher hills and mountain slopes, refuses to become a captive. Both *S. bellum,* the blue-eyed grass, and *S. californicum,* the golden-eyed grass, are well established in our garden. Both species bloom over a long period in the spring, while *S. californicum* often blooms again for a short time in the fall.

Of the many monardellas that grow in California, our garden can boast of only one collected plant of *Monardella neglecta* from the serpentine slopes of our adjacent hills. It is a neat erect plant with somewhat serrated foliage and flower heads of soft lavender-blue, dainty and long lasting. We recently acquired a plant of *Monardella macrantha,* but as it is still in its container, a report on its adaptability will come later. According to our reference the flowers are scarlet and showy. The plant should be allowed to ramble at will in an open sunny well-drained spot; if all goes well we shall be richly rewarded, as this is considered to be the best of all monardellas.

Another attractive native, which was on the spot when we arrived and has been with us ever since, is the evergreen shrub *Diplacus aurantiacus.* Much has been done by hybridizers to extend the range of colors, which now include ivory, pink, rose, yellow, apricot, orange and red. A group planting of diplacus in bloom may well rival one of azaleas. By pruning back judiciously in fall we found that we could improve the shape of our plants and at the same time encourage new and stronger growth. There are about six species of *Diplacus* native to California.

Among California natives there is a long and impressive list of fine penstemons. Many have been tried in our garden, but all except two have failed to survive. *Penstemon cordifolius,* although described as having long trailing stems, has not proven so with us. Our plants are about six years old, grown from seed, and are large and sturdy with stems to three feet. Growing on our dry hillside may possibly have had a restraining influence. The flowers are scarlet and yellow and very showy in midsummer. *P. heterophyllus,* which has a wide range in California, possibly more than any other penstemon, would make a very attractive plant if the scale which attacks it in this locality could be controlled.

Mimulus moschatus, the musk flower, is easily grown from seed and carpets a bit of our shady rock garden, producing pretty yellow blooms over many weeks. Sometimes it becomes a little too rampant, but may be controlled easily. Native to most of California, it grows along stream beds and in moist spots as far north as British Columbia.

On a short collecting trip to the Sierra Nevada mountains last summer, we brought back a few plants from well over the 9,000 foot elevation: *Eriogonum wrightii* var. *subscaposum, Lupinus lyallii, Erigeron compositus* in a very compact form, *Erigeron algidus, Astragulus whitneyi,* and a few others still to be identified. Cuttings were taken of beautiful *Zauschneria latifolia,* which grows at the 8,000 foot elevation and should be hardy. The brilliant scarlet flowers against the grey granite made a picture never to be forgotten. Cuttings were also taken of *Penstemon confertus* var. *geniculatus* and of *P. floridus;* all have rooted well and have been potted up to await the spring.

TWENTY-FIFTH ANNUAL MEETING AND LUNCHEON

EDGAR L. TOTTEN, *Ho-Ho-Kus, N. J.*

OUR SILVER ANNIVERSARY meeting was held on May 16, 1959, with luncheon at Ryland Inn, Whitehouse, New Jersey, followed by a visit to the gardens of Vice President Leonard J. Buck at Far Hills, New Jersey.

Several records were broken, among them the largest attendance at a meeting since the early days of the Society, and the coldest May 16 ever recorded in this section. Let the New York Herald Tribune of May 17 tell the story:

"The official temperature at 6:20 a.m. yesterday was 41.9 degrees, coolest reading recorded here on a May 16 since the United States Weather Bureau began keeping records in 1871. The previous record, an even 42 degrees, was established in 1873.

"The temperature reached 59.7, high for the day, at 4:35 p.m."

Some early arrivals immediately sought hot coffee, while others found their way to the tap room for liquids producing more immediate warmth.

Among those in attendance were six of our charter members and members from as far away as Venezuela, which is probably another record.

Our tour through Mr. Buck's wonderful garden was greatly enjoyed by everyone. Fortunately his garden is located in a very protected spot and suffered little damage from the devastating 1958-59 winter.

The plant sale was rather disappointing, caused perhaps by the necessity of replacing damaged plants and the reluctance of our members to part with anything that would produce a flower. However, there were a few choice items offered. This might be an opportune time to remind you to pot up a few choice things for next year's sale. It is planned to permit contributors first choice of plants.

The growth of your Society was rather modest during the past year. As of March 31, our total paid membership was 797, of which eight were sustaining and five life members. In addition we had 32 honorary, complimentary and exchange members, making a grand total of 829, which is the largest in our history.

We have added a third collection to our slide library. The new collection consists of some ninety slides contributed by the Northwestern Regional Group. The majority of the slides are of plants growing in the wilds in the mountains of that region, and will give viewers some ideas of the conditions under which the plants may be grown. Greater use of the slide collections was made during the past year, but they still remain idle much of the time.

At the beginning of the year we inaugurated the book service which was discussed at last year's meeting. Orders have been received for nineteen books, fifteen of which have been delivered to the purchasers. It is hoped that the other four will come along in time.

Three directors whose terms of office expired this year were unanimously reelected for further three year terms. They are Dr. Edgar T. Wherry, Mr. Kurt W. Baasch, and Mr. Bernard Harkness.

It is with deep regret that I must report the passing of three of our members of long standing: Mr. Clarence McK. Lewis, whose obituary notice appeared in the April *Bulletin,* Dr. Ralph A. Fenton of Portland, Oregon, and Mrs. Beatrix Farrand of Bar Harbor, Maine.

DIRECTORS' MEETING

The officers and directors met at eleven a.m. on May 16, 1959, at Ryland Inn. The following were present: Mr. Kurt W. Baasch, Mr. Harold Epstein, Mrs. Mortimer J. Fox, Mrs. Dorothy E. Hansell, Mrs. Bernard Harkness, Mrs. Harry Hayward, Mr. Frederick Landmann, Miss Alida Livingston, Mr. Alex D. Reid, Miss Alys Sutcliffe, Mr. Edgar L. Totten and Dr. Edgar T. Wherry.

Many questions had been brought up at our last meeting, among them the following which were unanimously approved:

> A sustaining membership to carry the same privileges as those of a family membership.
>
> A Family Life Membership was established at a rate of $150. This new membership is to be available to husband and wife only.

In the early days of the Society we published from time to time a list of members' gardens open for visits by other members. Those present at the Director's Meeting were of the opinion that a greater interest in rock gardening would develop from a continuation of these visits, and that much knowledge of the intricacies of rock gardening would be gained. It was decided to reinstate this feature. A questionnaire will be prepared and sent to all members, on which may be indicated the time of day, days of the week, whether an appointment is necessary, and other information.

The scarcity of desirable plant material was discussed, as many of the larger rock garden and alpine plant nurseries are no longer in business and members are having difficulty in locating reliable sources of material. Many of our members do a cash and carry, or a mail order business. If you are one, please register with us by filling out the questionnaire which you will receive in the near future. The list need not be confined to the nurseries of our members. If you know of any reliable source of plant material, please let us know about it. We hope to establish sources for native material in all parts of the country. When the list is completed, either it will be published in the *Bulletin* or notice will be given that it is available.

A revision of our outmoded by-laws was discussed and a committee was appointed to carry out the work. Another committee was appointed to review our regional groups, rearranging their boundaries or establishing new groups wherever it is thought beneficial. The Canadian provinces are to be incorporated in the revised groups.

BOOK REVIEW

Rock Gardens. By E. B. Anderson. 176 pages. Baltimore: Penguin Books, 1959. $1.50.

This Penguin Handbook, prepared in collaboration with the Royal Horticultural Society, is unique in two respects: it is the first "paperback" on rock gardening, and it is the first book on the subject to be written by a scientist. The author, E. B. Anderson, is a research chemist, now retired; he has grown rock plants for fifty years and has served the Alpine Garden Society in many capacities, including those of President and originator of the Seed Distribution.

The book is conventional in choice of topics, dealing first with rock plants as Mr. Anderson has observed them in their native habitats, then with construction, accessory and special features, planting and cultivation, propagation, collecting, selections of rock plants, bulbs and shrubs, and lists of plants for special purposes.

It is far from conventional in treatment, however, for everywhere the reasoning of the scientist is evident. There are no casual and unsubstantiated statements: the precise reason for each point is clearly set forth, so that the reader can judge for himself exactly what may be applicable to his own garden. Mr. Anderson is original in thought, and some of his proposals are somewhat at variance with conventional ideas, yet there is a sound basis for all of them. This is a book for the gardener who wishes to know the why as well as the how.

The selection of plants is based on the premises that all listed are worth growing in a small garden, that if the simple recommendations for cultivation are followed they are reasonably long-lived, and that they are usually obtainable without difficulty from some nursery—in Great Britain; it is doubtful that even a very small percentage of them can be purchased in this country at present, but most, other than named clones, are procurable through the various seed exchanges. After brief comment about the virtues and needs of each genus, a few of the best species are listed, with their height, color, and season of bloom. Excellent photographs of nearly one hundred species more than compensate for the unavoidable brevity of the descriptions, whch comprise those of about six hundred species and forms. Among the lists is one of "plants to avoid"; it contains at least half a dozen that are highly regarded by many American gardeners.

This is a book that should be in the library of every rock gardener, and that should be consulted frequently. Its compact but lucid style and wealth of sound ideas set it apart from all other books on the subject.

AMERICAN ROCK GARDEN SOCIETY
TREASURER'S REPORT

YEAR ENDING MARCH 31, 1959

Cash in banks at March 31, 1957			$3,076.98
Receipts for the year:			
Current dues-1958		$ 940.70	
Prepaid dues-1959	$1,528.55		
1960	217.03		
1961	115.00		
Life membership	100.00		
		1,960.58	
Sale of Bulletins		128.35	
Seed exchange 1958		135.80	
Seed exchange 1959		315.48	
Plant sale		155.25	
Advertising in Bulletin		98.33	
Sale of books		83.15	
Interest on savings account		34.16	
		$3,851.80	
Disbursements:			
Bulletin expenses:			
Printing	$1,515.90		
Cuts	91.45		
Mailing and postage	105.26		
Editor's compensation	300.00		
Mailing permit	10.00		
Printing 1957-58 index	145.33		
Total Bulletin expense	$2,167.94		
General expenses:			
Secretary's compensation	$ 364.00		
Printing and stationery	207.35		
Seed exchange printing	216.19		
Postage	115.30		
Telephone	13.61		
Office expense	28.30		
Dues to American Horticultural Council	10.00		
Cornell Rock Garden bulletin	100.00		
Sundry	2.75		
Books purchased	51.41		
Total general expense	$1,108.91		
Total expense		3,276.85	
Excess of receipts over disbursements for the year ending March 31, 1959			574.95
Cash in bank at March 31, 1959:			
Citizen's First National Bank & Trust Co. Ridgewood, New Jersey:			
Checking account		$2,386.80	
Savings account		1,265.13	
			$3,651.93

Respectfully submitted
ALEX D. REID, Treasurer

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