BULLETIN

of the

AMERICAN

ROCK GARDEN SOCIETY

Vol. 18 JULY, 1960 No. 3

DIRECTORATE

BULLETIN

Editor Emeritus
DR. EDGAR T. WHERRY, University of Pennsylvania, Philadelphia 4, Pa.

Editor
C. R. WORTH, Ithaca College, Ithaca, N. Y.

AMERICAN ROCK GARDEN SOCIETY

President.....HAROLD EPSTEIN, Larchmont, N. Y.
Secretary.....E. L. TOTTEN, Ho-Ho-Kus, N. J.
Treasurer.....ALEX D. REID, Mountain Lakes, N. J.

Vice-Presidents
LEONARD J. BUCK — MRS. HARRY HAYWARD — MRS. COULTER STEWART
FREDERICK E. LANDMANN — BRIAN O. MULLIGAN

Directors—
Term Expires 1960—
MISS ALYS SUTCLIFFE — MR. HENRY S. FLEMING — MRS. M. J. FITZPATRICK
Term Expires 1961
MRS. DOROTHY E. HANSELL — MISS ALIDA LIVINGSTON — MRS. MORTIMER FOX
Term Expires 1962
DR. E. T. WHERRY — MR. KURT W. BAASCH — MR. BERNARD HARKNESS

Director of Seed Exchange
BERNARD HARKNESS
5 Castle Park, Rochester 20, N. Y.

REGIONAL CHAIRMEN

Northwestern.....MR. ALTON DU FLON, 3223 Perkins Lane, Seattle, Wash.
Oregon Subgroup.....FLOYD W. MCMULLEN, 5420 SW Alfred St., Portland, Ore.
Western.....RAY WILLIAMS, 108 Meidl Ave., Watsonville, Cal.
Central.....MRS. GLEN FISHER, Rt. 3, Box 168, Oshkosh, Wis.
Lakes.....ROBERT M. SENIOR, 1605 Union Trust Bldg., Cincinnati, Ohio
Southeastern.....RALPH W. BENNETT, 5607 N. 22nd St., Arlington 5, Va.
North Atlantic.....HENRY S. FLEMING, Atlas Acre, Upper Nyack, N. Y.
New England.....MRS. ROBERT W. MANTON, Durham, N. H.

Published by the AMERICAN ROCK GARDEN SOCIETY, incorporated under the laws of the State of New Jersey. You are invited to join—annual dues are: Sustaining Membership, $10.00; Family Membership, $5.00; Ordinary Membership, $3.50; Life Membership, $100.00. Address communications regarding membership, dues and other matters relating to the SOCIETY to E. L. TOTTEN, 238 Sheridan Ave., Ho-Ho-Kus, N. J. Address manuscripts and other matter relating to the BULLETIN to C. R. WORTH, Ithaca College, Ithaca, N. Y.

BULLETIN

of the

AMERICAN

ROCK GARDEN SOCIETY

C. R. Worth, Editor

Vol. 18 July, 1960 No. 3

THE PURPLE LOCO AND OTHERS

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

A PLANT that seems styled purely for decoration is the oxytropis, any one or several or perhaps many members of a large genus, well represented in North America on the western plains and mountains.

In simplest terms an oxytropis plant is composed of a rosette or group of rosettes of pinnate leaves, more or less silky, often silvery. Rosettes are connected by stems so short and lying so flat that the plant appears stemless. From each section arises in season according to the species a scape or leafless flowering stem, usually quite upright, bearing a spike or plume of showy pea blossoms at a low moderate height. In other words a mat of attractive leafage adorns itself with a veritable bouquet of bloom.

At first flowering a plant produces but one or two racemes, more with age. Six or a dozen spikes make a lovely show and old plants may send up twenty or thirty. The blooming period extends over three or four weeks. Then many slender pods line the stems, turning light brown with late season ripening, rather decorative, while the foliage retains a pleasant appearance the full season.

Oxytropis lambertii has a wide range, inhabiting sand hills, gravelly plains and mountain sides and if one comes upon a plant or extensive field of purple-red blossom it is most apt to be this species. Wyoming and neighboring states comprise its principal area but it is known from Canada to Texas. The common name is purple loco, or loco weed, though certainly it is not a weed in the garden sense in any particular. "Loco" is a Spanish word meaning crazy that describes an effect the plant has upon cattle which under poor pasture conditions acquire a taste for it. Considerable amounts of the herbage eaten daily for a period result in poisoning. A North Dakota authority states that no trouble from it is known to occur in that state.

Its preference for sand hills, gravelly ridges and limestone or gypsum exposures, usually dry places, suggest likely places to look for it. Now and then an extensive field of it is to be seen. But in the garden seed may come sparingly, providing fewer plants than might be desired.

The usual reference to *O. lambertii's* color may leave one questioning. Its "purple" is more poetic than accurate and "dark purple" or "dark blue-purple" more correctly describes the dried herbarium specimen. Pesman, in "Meet

the Natives" (of Colorado), says *O. lambertii* is the reddest of the locos. In truth an occasional plant carries color as fine as that of the 'American Beauty' rose. Predominantly purplish red, it varies to lighter or darker or rarely to purple or bluish or to white. Flowering time is mainly June.

Oxytropis sericea with its broader, more silvery leaflets presents a denser foliage effect. Its very free and lovely clusters are put forth in May, its finest color, according to taste, a rich pink—and that in a very limy sandstone. In different areas it varies to light pink, cloudy light blue, oyster white and to dark rose, all carrying a hint of pastel or neutral tint. Like *O. lambertii* it carries its show at six to ten inches usually, or to twelve.

From seed from Calgary I once grew a plant very similar to *O. sericea* but with blossoms of rich cream. Unfortunately my two plants passed on after flowering once, whether from unendurable tree root competition or insufficient lime is uncertain. Seed has not again been available. It was probably the species *O. macounii,* and that one should be avidly sought.

A "yellow" oxytropis I have not seen, though seeing that color mentioned now and again. *O. villosa* is beautiful creamy one of lighter tone than *O. macounii.* It dwells in a narrow area in the Black Hills, frequent there, not plentiful, and large plants have not been noted. It is highly desirable though possibly short-lived.

O. gracilis is blue-silvery with adpressed hairs. It is long-lived, forms ample mats and sends up many narrow plumes of light yellow strongly tinged with green—non grata in my garden. Why do I not dig it out?

O. pinetorium grows on rich north slopes in Fall River Canyon in the Black Hills, and from Montana to Oklahoma and New Mexico. In the local habitat the terrain is dry enough at times but with much shade. With dark background its plumes of white, faintly tinged green, show up well. Three or four spires seem to be its stint. It has now been brought to my prairie environment for test.

On the bluffs of the Platte River in Nebraska late in June when *O. lambertii,* there, was just closing its blooming, appeared numbers of a small loco bearing one to five scapes, four to five inches high, with racemes of but five to nine florets each. It would hardly have been distinguished from the intermingled *O. lambertii* except for the uniformity of the short inflorescences, the freshness of the florets which seemed to celebrate that particular day, and a certain brightness in its light rose red color. This pretty little one had to be *O. plattensis.* No large plants were noted.

Quite different was our discovery of *O. besseyi* on bluffs of the Belle Fourche River in Wyoming one mid-June day of another year. True, the sun of late afternoon was shining through the masses of full-blown, closely clustered plumes on ledge after ledge, but could such a show be put on by any wildflower? The road ran closer to the bluff. A larger colony appeared. Clearly there was a difference in this loco. We scrambled up to the level of the flowers, Harkness, Vatter and I.

Florets in the great clusters were the oddest of pea blossoms, banners ample, wings extra wide, keel petals so tiny the lower part of the blossom seemed to be cut away—papilios really awing! The mass effect was of an unequaled broadside of color. The color, something of light rose with an infusion of buff or terra cotta, distinctly deeper at petal base. Here the plumes were more than twelve inches high. A six to ten inch height is more usual. There was the accustomed gray pinnate foliage.

O. besseyi grows in a mixture of gritty disintegrated sandstone and clay

shale, firm to loose, or in crevices of the stone. It must be admitted that I have not mastered the cultivation of this one in rather limited trial. Impression is that this and any other oxytropis that makes large crowns are long lived. It is worthy of a place in any garden.

A northern kind, *O. splendens,* is at home along both sides of the North Dakota-Montana-Canada line. It is described as "striking because of additional rows of leaflets, verticillately arranged, and blue flowers contrasting with gray leaves". Most parts are conspicuously hairy. This one, sought over many years, seems hard to come by. Twice a tiny pinch of seed has been obtained, from which came a few plantlets that met with too difficult drought and did not gain size enough to winter.

My limited acquaintance with Oxytropis inclines me to accord any member of the clan close consideration. *O. lambertii* and *O. sericea* are easy to grow here. Others may be with a bit of luck and attention to their obvious needs of drainage and alkalinity, in most kinds. Pesman mentions *O. albiflorus,* white or lavender with purple spot on the keel, as especially neat and growing in large fields. There must be other kinds worthy of hunting out. There is at least one species fashioned to order for the most exacting rock gardener, *O. multiceps,* credited to Wyoming, Colorado and Nebraska. It bears the enticing character of a close textured cushion of tiny leaves and fairly large flowers of reddish purple on very short scapes, of five millimeters or so.

Probably a collector may move an oxytropis plant successfully when it is in flower, but it must be a very young plant, preferably at first flowering or earlier. After a couple of years of age roots will be found to be woody and unadaptive and interminable in depth, destined to remain in their chosen places of solitude and to be seen and admired untouched. Seeds, however, are plentiful in season. They are ready for the gathering when the long upright pitcher-like capsules begin to open at the throat, and even after weeks of shaking and rattling by the wind, some treasure is still likely to be found in the depths of the vessels. Do not, on best advice, pass them up. Almost any species is worthy of trial.

FIRST AID FOR RUN-OFF

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

TO CONTROL and check run-off in a raw, newly set rock garden, furnace clinkers, if you have access to them, are good first aid for this disconcerting condition. "Clinkers" are the fused, porous masses of incombustibles which build up around the fire box of forced draft coal furnaces, and which must be regularly picked out for optimum furnace operation. The home owner with a coal stoker has a ready source of clinkers. Others can sometimes obtain clinkers from industrial sources by judicious inquiry.

Clinkers are recommended in general gardening to lighten heavy soils, and as a subsoil ingredient for good drainage. As a first aid for run-off, they may be used by partially embedding them in the paths of the rivulets. The innumerable pores soak up the soil and form a dam against run-off. Their use in the rock garden is entirely beneficial; they do not look incongruous for long, for they provide the happy kind of home preferred by the choicest of rock plants. As the pores become filled with soil, plant roots readily invade them, for in these moisture-retaining chambers they will be cool and well nourished. From this standpoint, clinkers make a good substitute for naturally porous rocks such as tufa, if one can get one and not the other.

THE THYME LAWN

J. P. ZOLLINGER, *Brooklyn, N. Y.*

THIS PARTICULAR section of our garden, shown in the accompanying photograph, is one of those which so far have proved the most persistently satisfactory. Originally we called it the Thyme Ramp, or simply the Ramp, because it was begun on a straight strip of ground rising slowly between a level lawn and the dry wall at the bottom of the rock garden. It has since bent around to the right and is extending along another side of the lawn, so that it now has roughly the shape of a boomerang. Here, we thought, we needed a special sort of planting, a transition zone between the more or less civilized and suburban looking lawn and the rock garden proper with its atmosphere of studied wilderness. The situation called for something almost as quiet as groomed turf, almost as low but already imparting a note of the untamed uplands after which the rock garden aspires.

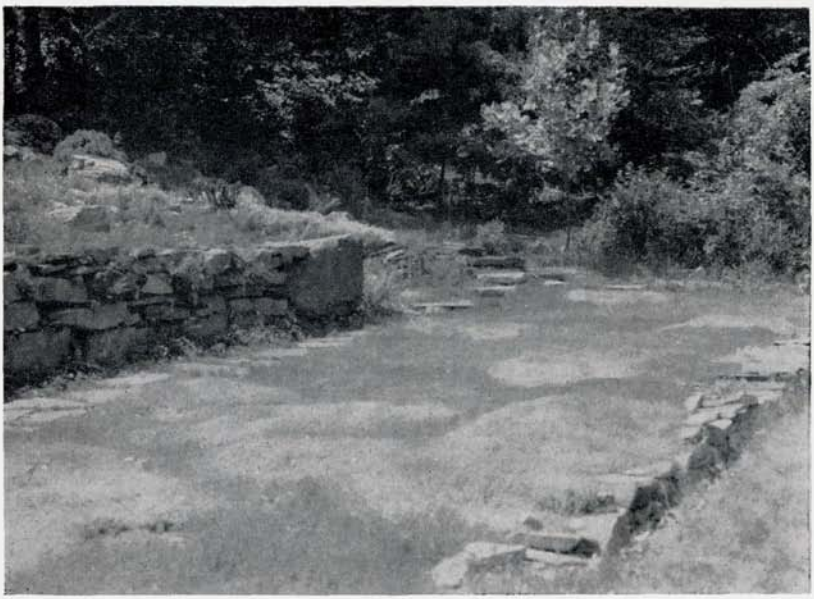
A lengthy list of low ground covers was compiled and after every species which disqualified for one reason or another was struck off, nothing remained but *Thymus serpyllum*. So *Thymus serpyllum* it had to be. Only later we learned from one of Lawrence D. Hills' books that this sort of thing is fairly common in England and there caled a Thyme Lawn. Since then we have adopted the English term.

From two plants on the rock garden slope which clearly manifested their totalitarian leanings I made a few hundred cuttings, which of course was as easy as propagating a weed. They were of two different varieties. One we had bought under the label of *Thymus serpyllum coccineus,* but which is more likely *T.s.* var. *ruber,* with deep red flowers and slightly coppery foliage. The other is probably the common type with pale lilac blosoms and soft green leaves.

The actual establishing of the thyme lawn proved considerably more troublesome than the making of a few hundred cuttings. For one thing, I made the mistake of planting out the cuttings as soon as they were rooted. This resulted in considerable losses. For the ground was the sheerest stony clay subsoil left exposed after the bulldozer had done some preliminary clearing and grading. A first attempt to improve the soil with a green manure crop had failed lamentably, because a woodchuck (*Marmota monax* to the zoologically minded) grazed off the buckwheat I had chosen for the purpose as fast as it sprouted. When the thyme cuttings did so poorly, I tried working in pulverized limestone, sand and manure, which seemed to encourage the weeds more than the tiny thyme plants. Chickweed, pigweed, lambs quarters, white clover, crab grass and weedy sedges, wood sorrel and some dreadful veronicas had to be fought for two years with the earnest of terror and at least assiduously for two more years to keep them from throttling the thyme.

Gradually, however, we developed a fairly efficient method of combating the weeds and of improving the ground at the same time. Every week we piled the lawn clippings on the patches of soil not yet covered by the thyme and on adjacent weed-stocked stretches over which we wanted to extend the thyme carpet. Then, as soon as the weeds were killed under the smothering and rotting mulch, more plants of *Thymus serpyllum* (fairly large ones now) were set out and kept watered until established.

Thus the fight was finally won. The gaps within the earliest planting closed, the thyme frontier advanced while the wild weeds retreated; so that, three years ago, we for the first time beheld what we had visualized from the



J. P. Zollinger
The Thyme Lawn, showing the contrast of the two varieties used.

beginning: in June solid sheets of soothing lilac in a random pattern, in July a similar casual pattern of deep pink all over the "ramp." The sight of this heath-like flowering carpet is delightful (my wife uses the word enchanting). It lasts for a month or longer. When the bloom is past, the lawn mower, with the rotary blade set three inches high, is run over the planting to remove the faded spikes and the thyme lawn gains a new freshness of warm harmonious greens.

This green carpet is one of the great assets. Never is there any monotony in it. Never that coat-of-paint effect of an ordinary lawn, never that crew-cut smoothness. Compared with the machine-made turf, the thyme lawn always bears the stamp of a hand-crafted article or of spontaneous growth, through more labor went into it than into almost any lawn. Its surface is always subtly billowing and the two greens of the two varieties blend admirably. Even in the midst of a snowless winter, when ordinary lawns are as brown as dead sole leather, the thyme lawn maintains an intriguing play of subdued living color. At any season, and to our constant surprise, it almost unfailingly evokes comment from visitors not particularly garden-minded. To them the very simplicity of it all seems stunning.

In the beginning, when there were still many gaps in the planting, we had thought of filling them in with other varieties of *Thymus serpyllum* than the two we had started out with. But somehow we never got around to that and when the gaps finally closed and we witnessed the first spread of bloom unbroken by bare patches or brown mulch, we knew that greater color variety would have been a mistake. It might be appropriate and effective in different circumstances but for our purposes the two flowering periods, each kept to a single color, and the two subtly differing greens outside the great bloom, completely fulfill our early expectations.

WINNOWINGS FROM THE SEED EXCHANGE

DR. A. R. KRUCKEBERG, *Seattle, Wash.*

RETIREMENT BREEDS autobiography—or, at least, reminiscences, sage counsel, and admonitions. Although your retiring director of the Seed Exchange *could* resist the aforesaid temptations that accrue to the emeritus status, I feel both the urge and the obligation to compose a few notes on what it has meant to be involved with a seed exchange enterprise.

The Northwest Unit of the A.R.G.S. took over the Exchange from Bernard Harkness in 1957 and since then it has had three banner years of seed income-outgo. I have summarized the arithmetic of our three-year stint, with the Harkness year (1957) tossed in for comparison:

Year	No. of Contributors	No. of Listings	No. of Requests Filled
1957	79	ca. 900	——
1958	102	1050	253
1959	113	1237	ca. 275
1960	75	1003	262

The figures tell a story of a flourishing business. Even the change in 1959 to five cents a packet and the dollar minimum did not lessen the number of requests. The slight decline in 1960 was, I suspect, due to the too-brief and too-late notice to our public that we were to be in business—my fault! The most significant conclusion to be drawn from the statistics stands as a warning! To wit: as the A.R.G.S. increases its membership, a widening gap grows between the number of contributors and the ever-increasing number of requests for seed. The gap is more critical than the figures indicate, since many contributors are able to send in only one or a few different collections. Thus, the backbone of the list is made up from the contributions of a dozen or so veteran and prodigious collectors and savers of seed. Just look over the 1960 list and note which contributors' numbers recur over and over again. This year George Schenk of Bothell, Washington, takes the contributors' prize in point of variety and rarity. Others whose contributions were particularly meritorious were: Dr. C. R. Worth (collected native alpines of western United States—as ever, his specialty); Mr. T. Rokujo of Tokyo (Japanese alpines); Dr. R. Ruffier-Lanche (collected alpines from the French Alps); Mrs. N. V. Cooke of Ireland: Elmer Baldwin of Syracuse, N. Y.; Bernard Harkness of Rochester, N. Y.; Carl English and the University of Washington Arboretum, both of Seattle; and Mrs. Louis Strutz of Anchorage, Alaska. These and a few more contributors provided us with the bulk and the variety for 1960; without their support the seed list would have been scant indeed. The whole point of this partial recapitulation is to point up the need for more seed contributions. The collecting of seed can begin in your own garden. What more utilitarian fate for dried-up flower stalks than to put them in paper bags, the batch to be winnowed of its seed come early fall? And don't overlook seed collecting in the woods or fields or mountain-tops on the weekend jaunt or summer vacation, also!

What makes an acceptable contribution of seed? I won't claim that what follows is a majority opinion. In fact, some veterans will take issue with my choice and ranking of criteria for a seed contribution. And of course each criterion has its own degree of latitude.

Item #1. The contributed seed should have some rock garden merit. Whereas seed of choice or unusual plants for the perennial border, or seed of exceptional trees and shrubs have limited but deserved place on the list, I personally feel that the more common annuals, perennials and woody species should not appear. These latter are rarely requested anyway. Since the predilection for woodland and bog gardening has emotional kinship with rock gardening proclivities, I would endorse the inclusion on our list of seed suited to such habitats, especially that of North American natives. Our European correspondents are eager for our native species of woodland or alpine habitats.

Item #2. A goodly quantity of any contribution is always a desideratum. When a rare item on the list is represented by *three seeds,* its inclusion is hardly more than a fiction. Obviously, many items just don't come in ounce lots and we must content ourselves with parceling out a few miniuscule samples. But when the number of seeds is vanishingly small, the contributor might as well keep it himself or give it to a friend.

Item #3. Cleaned and viable seed is a *must!* Sometimes either or both objectives must go begging due to honest ignorance. The difference between chaff, etc., and seed may be obscure, and viability still more difficult to assess. But so much uncleaned seed comes to us that really could have been winnowed with ease, that I must aver that in the Seed Exchange business, "cleanliness is next to Godliness"! "Sift that seed, blow that chaff, get a litle dizzy and . . .!" Often a measure of good or viable seed is its plumpness or heftiness. Wrinkled, lightweight stuff is usually a dead loss. The Aster Family (Compositae) fools many people in regard to what is or is not seed. Often we get a bushel of "hay" consisting solely of involucral bracts, dried ray and disk florets, and other chaffy miscellany. The dried corollas of asters, erigerons, edelweiss, etc., won't grow, but the plump elongate seed attached to the base of each corolla should. A hand or reading-glass is often a help in determining what is seed and what is not, as well as whether the seed is plump and ripe. Yet in many cases half-ripe seed of western natives has germinated promptly and generously, defying all rules.

Item #4. Contributors are the most original packers in commerce! Every imaginable container from pill vial to tithe envelope gets used. My only observation here is that the bulk seed (cleaned!) should be enclosed in a leak-proof package, clearly labelled with the best available name. I kept a special catch-all envelope for "mystery" seed—seed that had leaked out through envelopes, etc. When planted, this miscellany afforded a real panful of surprises! But back to packaging. Fine seed, such as that of most ericaceous species, as well as campanulas, primulas, calceolarias, etc., should be folded in wax paper before sealing in envelopes. The standard coin envelope is ideal for most seed, unless it be too bulky. Ideally, the Seed Exchange should receive the seed of a given item already subdivided into an optimal number of packets for distribution. Unfortunately, this seems never to work out in practice: those who take the trouble to subdivide usually are too generous and we have to subdivide further into smaller lots for distribution. To recapitulate, then, the Seed Exchange staff is happiest when they receive a neat, uniformly packaged contribution of well-cleaned, viable seed clearly labelled with the correct name. Such shipments are most often from those who know the turmoil of seed-exchanging at first hand. They are the ones who, when sending in an advance listing of their contributions (a very useful measure, incidentally) will follow up with just exactly what they have promised to ship—no more, no less.

Item #5. It should go without saying that the seeds should be correctly

named, yet such is too often not the case. Occasionally the error can be spotted in packeting or before sowing, as when tiny round black seeds arrive instead of the nutlets of *Lithospermum oleifolium,* if one is well acquainted with a variety of seeds. But very often the error cannot be detected till the plant has put out true leaves, or occasionally until it has flowered. It is most exasperating to have a crop of *Erigeron compositus* under the label of a choice townsendia, *Silene schafta* for *S. ingramii,* an annual androsace for *A. spinulifera,* a farinose primula labelled *P. davidii*—never something better than the label promised, always a commonplace instead of a choice species. True, correct identification is often difficult, and gardeners are all too much inclined to pass on a plant under the name it had when they received it (this goes for some nurseries and botanic gardens, too). But a brief consultation of Farrer, Clay, or Gabrielson will often point out a glaring error, and when in doubt, a question-mark after the name may spare the recipient a heart-ache.

What seeds are the most sought after and what ones languish in the seed files, never to be asked for? You have only to refer to the items contributed by the half-dozen collectors mentioned above to discover the most popular types of seed. It is safe to say that all the genera which are, in the main, sanctuaries for rock garden gems become depleted most rapidly. Then, seed of non-North American species collected in the wild are drained off by our North American members, while our foreign membership asks for our own natives. That leaves us, after filling all requests—both original desiderata and the later requests for surplus—holding a weird assortment of seed of woody plants, perennials for the tall border, and some few just plain weeds. Of course the connoisseur would say that some of the commoner and more aggressive rock garden species should be classified as weeds, but my ignorance of the quality of these breeds a degree of tolerance. I intended to list a few of the left-overs to illustrate my point, but the deluge of protest and argument *that* would bring calls for silence on that score. Not a few of our left-overs are really gems, yet either the A.R.G.S. clan is satiated, or it is bent on rarity for rarity's sake. Other surpluses are, in quantity, reminiscent of Ezra Benson's stockpiles. Some items came to us almost by the pound! Even with generous portions, we had surpluses of these. For instance, Bernard Harkness sent in a plastic sack full of *Saxifraga aizoon* collected in Norway; many of you received this as a "bonus" packet . . . and we still have some left!

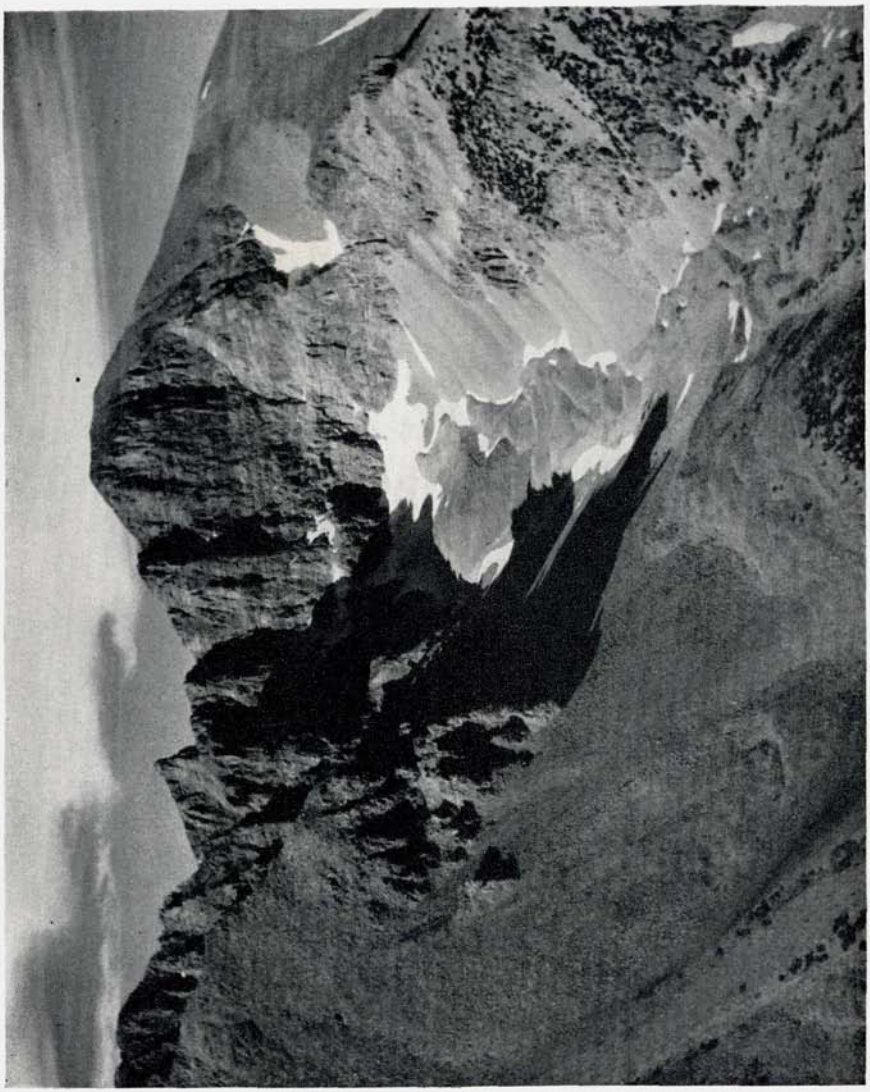
Exhausted on the first round of order-filling were such things as *Achillea clavennae argentea, Androsace carnea laggeri, A. carnea brigantiaca, A. cylindrica, A. hedraeantha,* and *A. lactea.* Naturally, *Aquilegia jonesii* led the columbines in popularity—after all, we had just enough of it to make up two packets. Also snapped up in a hurry were *Bellium minutum, Boykinia heucheriformis* (I could have harvested much more, but feared it would be unappreciated—one never can anticipate demand. Ed.) *Campanula calaminthifolia, C. tommasiniana,* the Japanese epimediums, *Douglasia montana biflora, Eriogonum douglasii, Fuchsia pumila, Penstemon caespitosus perbrevis, Pinguicola montana, Silene keiskei akaisialpinum leucanthum* and *Thymus quinquecostatus ibukiensis.* I don't know many of these in person, yet I'd be tempted to try them some year just to see what the experts feel are choice plants. I'll wager that said experts did not even have to take time to look them up in Farrer or the RHS Encyclopedia. Incidentally, I might suggest that, in fairness to western members who'd like a crack at the choicest items on the list, the powers-that-be might hold off mailing the Seed Lists to the eastern membership for a day or two in order to give the western mailings an even break.

Once the task is completed of getting the season's contributions sorted and tallied so that we can compose, check, and proof-read the list in manuscript, we then spend a month or so packeting seed in readiness for the January onslaught of requests. For the past two years we have used the "order by number" method with a detachable order blank. This scheme helped us in two ways: it eliminated the need to write plant names on each and every one of the 10,000 to 15,000 packets we made up; and as well, it gave us a simple, uniform way to fill orders. Almost everyone followed directions and the system was vindicated. But errant members there were—enough to give us a headache and a laugh or two. The most frequent misdemeanor was to list the seed request numbers out of order; apparently such individuals were so excited by the list that they "browsed" helter-skelter, writing down numbers as they skipped about. (Our British friends ask that the numbers be given *in order of preference*, so that perhaps some of our members were suffering from a hang-over after the orgy of selection from the A.G.S. and S.R.G.C. lists. Ed.) It might be well in the future to have a numerical sequence printed on the order blank—all the requestor does then is to circle his choices.

The beginner at rock gardening is understandably bewildered by the formidable array of choices on a seed list, so he asks for help. Thus we may be asked to "... send forty packets of alpines that form low, dense mats of silvery foliage and that tolerate severe winters and hot dry summers." Alas! Our ingenuity and patience are not sufficient to cope with such individualized requests. The rock gardener soon realizes that to enter this craggiest of domains in the world of gardening, he must study, experiment, and "suffer the slings and arrows" of failure . . . all on his own. Our operation, to be efficient, must rely on the membership to follow directions, ask no unusual favors, and if deserved, supply us with a word of encouragement. And remember, the *Bulletin*, past and present, is a mine of information.

The final chorus of this swan-song must end in paeans of gratitude. The many members of the Northwest Unit that came faithfully to the seed "bees" night after night remember those hectic hours well. We worked hard, but not without reward. Conversation and wit among friends, topped with gastronomic delights, made the evenings slip by quickly and pleasantly. Our heroes must not go unsung. On the Northwest scene, we enjoyed the companionship and productive labors of Sally Allen, Dr. J. D. and Mary Jane Barksdale, Jim and Helen Buzard, Mrs. Chester Chatfield, Mrs. Joe Daniels, Carl and Edith English, Mrs. A. K. Free (who also "Paul-Revered" our many meetings), Neill Hall, Dr. C. Leo and Helen Hitchcock, Mrs. J. Jezik, Mareen Kruckeberg (who put in many long hours preparing for each meeting of the Exchange), Clarence and Marian Larsen, Scotty and Eve McClanahan, Harold and Altha Miller, Helen Morris, Brian Mulligan, Bob and Evie Putnam, Frances Roberson, Merle and Eileen Sutton, and Joe and Jean Witt. To Dr. Carl Worth and Mr. Edgar L. Totten, "thanks!" for their significant roles in the operation. And to all contributors, large or small though their contributions may have been, a benediction on ye!

We are told that Mr. Bernard Harkness will take over the Seed Exchange again after a three year "breather". We wish him unlimited success with the thriving busines that we bequeath him. We are most thankful that this most most worthy—nay, indispensable—function of the Society is to be perpetuated by so capable and knowledgeable a plantsman. And in parting, may we say tearfully—with tongue in cheek—that we don't envy him!



Erwin Fehr

Wheeler Peak from the air, the glacier in shadow at the foot of the cliff, center.

A DAY IN THE SNAKE RANGE

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

ARROW-STRAIGHT across the mountain-studded alkali flats of Utah's West Desert, once the bed of prehistoric Lake Bonneville, for ninety miles the highway U. S. 6-30 is undefiled by house, filling station, or billboard. At last it is deflected into a canyon through a little range as blasted and sere and sinister as though it had come straight from the Inferno, or from the land of Browning's "Childe Roland". Abruptly the canyon ends, and one looks across the wide expanse of Snake Valley to where, blocking the horizon, Nevada begins with the towering peaks of the Snake Range, topped by 13,061 ft. Wheeler Peak, highest summit in the ranges of the Great Basin.

Long intrigued by this remote peak which I believe I once glimpsed from a height in central Utah, I first saw it near sundown in the summer of 1947. Like a jagged rotten wisdom tooth it rose above us to the south of Sacramento Pass, snow-streaked and tremendous. I longed to investigate it at once, but my companion showed little interest, and as I had aggravated a badly turned ankle by a taxing climb on Troy Peak the day before, I let the opportunity pass.

For eleven years the vision of the peak haunted me, assuming fantastic dimensions and shapes, until once more I was in the West, with James Koenemann my companion. In mid-August we crossed the Utah desert, and made frantic queries at the villages of Garrison and Baker, just to the east of the range. But all we could learn was that there are one or two camping places in canyons on the eastern slopes, with perhaps a trail leading to the heights, but nowhere any reasonable access, nor horses to carry us in. We lingered for a tour of Lehman Caves at the eastern base of Wheeler Peak, superlatively lovely in its myriad delicate formations. It is a National Monument, with hour-long ranger-guided tours every hour. In the headquarters building are displayed pressed specimens of the more conspicuous plants occurring in the Monument, none of them rare. Here we were told of a camp a couple of miles up the canyon, from which one can hike to the summit over a twelve mile long and brutally taxing trail. As I no longer have the vigor and ambition of youth, this project seemed far too arduous, and we drove away across Sacramento Pass, between Wheeler Peak and massive 12,000 ft. Mt. Moriah, hidden behind its foothills. It is well that traffic is scant on that highway, for when I drive there my eyes are on the entrancing peak, so near and yet so inaccesible.

From the pass, down, down into Spring Valley and along the base of the Snake Range, even more fascinating and less approachable on its precipitous western side, over Connor's Pass and eventually into the little city of Ely, hidden in a canyon on the eastern face of the Egan Range. Ely has become one of my favorite spots in the west, as much for its friendly people and atmosphere of an old western mining town (complete with two casinos for diversion) as for the flower-decked hills which surround it.

Here Jim and I became acquainted with Darwin Lambert, editor of the Ely Daily Times, who, I soon found, lives up to his reputation of knowing more about northeastern Nevada than any other person. We learned that Darwin is among the leaders of a group who hope to have the Wheeler Peak region become the Great Basin National Park, in order to preserve forever its unique natural beauties. Of course, we must see and evaluate this wonderland and, where car cannot go, jeep often can. After much effort, Darwin arranged a trip for us: Bill Wagner, then secretary of the White Pines County Chamber of Com-

merce, was to take us over in a jeep; Erwin Fehr, photographer extraordinary of the Nevada scene, was to fly over with a companion who would take us into the mountains and carry Bill back to an important conference. We left Ely with a dubious tire and no spare, the plane was grounded at Ely by high winds, a half mile below timberline time ran out and we turned back (Bill arrived in Ely with three minutes to spare). I had a glimpse of *Primula parryi, Penstemon speciosus,* an interesting eriogonum and an unfamiliar oenothera, nothing more.

Bill wished to take us up again, to camp for several days, but was not free for a couple of weeks, and Jim and I were soon due back east. We let the matter ride till the following summer, but by then Bill was no longer in Ely.

One of my students, Jack Furcha, and I started west in late July of last year, with Ely again our goal. Darwin made great effort to find us a jeep, but none could be located, so one Sunday morning at six he drove up to the motel where we stayed, together with his wife and son Harvey. Still half asleep, we headed into the sun for some eighty miles, over Conner's and Sacramento Passes again, and into Snake Canyon, which penetrates the range from the east. The car, under Darwin's skillful handling, struggled over a road which no car should ever be asked to attempt, until at last the going became too steep, and we set out on foot. In a few minutes we were overtaken by a pickup, and the five of us clambered aboard, hoping that the extra weight would give necessary traction. But within a short distance, after struggling manfully half-way up a steep slope, the truck slid back to the foot of the incline and was abandoned. On we pushed, past the point where Bill Wagner had been forced to turn back the previous summer, through open coniferous woods over a vast granitic moraine. Plant life was scarce, but here and there along a stream *Primula parryi* flaunted its magenta heads, *Sedum rhodiola,* differing considerably from any form I had met before, grew in moist shady places, while in more open ones two or three shrubs with yellow daisies enlivened the road.

At last we came to lovely little Emerald Lake at the head of what, ages ago, was a great glacier. On two sides almost sheer slopes soared up to the sky, while on the third great rock slides came down from 11,800 ft. Pyramid Peak. Here Mrs. Lambert set up her easel for some watercolors of the lovely spot, the boys explored, and I sized up the limited flora, and wondered what might be above us. Soon we decided to climb a trail that clings to the steep slopes, I at first in the lead, looking for seeds of the compact white-flowered caespitose phlox that occurred more frequently the higher we went. Once I was assaulted by a humming bird which must have had a nest in the boulders beside the trail, for he attacked the others as they followed me, and was waiting for us when we descended. I was in bad condition that day, having trouble with breathing that could not be laid to the moderate altitude, and progressed slowly, until we came out on a great sloping alpine lawn at about 11,400 ft., directly beneath the steep slopes of Pyramid Peak. The flowers, as is customary in these isolated desert ranges, were limited in variety—a delicate lavender erigeron two inches high, the white phlox, *Silene acaulis,* and a miniature castilleja. We were now on a quartz formation, and I sought in vain for *Aquilegia scopulorum,* which has been reported from the range, and should find the alpine lawn, or at least its rougher edges, exactly to its taste. But there was no sign of the columbine, and Darwin and I wandered to the south, almost to where granite again replaced the quartz, and then to where the narrow ridge fell off precipitously into canyons on the western slope. At last we found the plant for which he was searching, having seen it on an earlier climb. I gasped with delight at sight of it, for

these mountains have indeed their special treasure, something I have never seen elsewhere: an eriogonum with spoon-shaped leaves of silver gray, only a quarter inch long, in a mat two or three inches across. Above it on stems of little more than an inch, good-sized heads of intense deep rose, crimson, almost scarlet at times, made it the most startlingly beautiful eriogonum I have ever seen. Once it had been found, it appeared in many places as an integral part of the turf. Seed was eagerly sought, but it was either shed or green; the few heads that seemed doubtfully ripe have as yet shown no wish to germinate. If this plant can only be brought into cultivation (and it will probably be no easier than eritrichium) it will be one of the treasures of the alpine house.

As we wandered around the lawn, finding no more novelties, and wished longingly for time and energy to explore the more distant peaks, especially the vast screes of lime or quartz on the south side of Wheeler Peak—several miles away, too far for a mere jaunt, and because of the exposure in this arid range, perhaps utterly barren—Jack, with the vigor of his eighteen years, dashed up the steep side of Pyramid Peak, carved his initials on the cairn, and came back with a sample of every plant he had met. The only new one was *Polemonium viscosum*—the only time I have met it in Nevada. At last, although our curiosity was far from satisfied, thirst and hunger forced us down to the lake. Later in the day we saw in the distance Lexington Arch, merely a legend until rediscovered a few years ago, a great limestone bridge that rivals the famous ones of Utah. At dark we drove again into Ely, weary and content after the long day, we older ones ready to relax, although the boys still had sufficient energy to spend the evening bowling!

When, after a few days farther south, we were again in Ely, Darwin told us of a dude ranch which had been started on a foothill of Wheeler Peak, approachable by a graded road. We started there in high hope of being able to obtain horses and ride to the peak, but after a few miles the graded road was closed, and only a sort of trail presumably negotiable by a jeep led in to the ranch. Once again Wheeler Peak had defeated us.

The glimpse that I have had of the Snake Range makes me eager to explore it further. In the cirque of Wheeler Peak there is a small living glacier, one of the most southerly in the country. High up, to the south of where we were, are vast stands of bristlecone pine, rivalling, and perhaps exceeding in age and size, the much publicized ones of the California Sierra. The sheer north-facing cliffs of one peak should be a happy home for many plants, perhaps even the primula of Troy Peak. No one yet knows the full story of the treasures hidden there.

PRIMULA ROSEA GRANDIFLORA

ALICE HILLS BAYLOR, *Johnson, Vermont*

Primula rosea grandiflora and its smaller counterpart, *P. rosea* 'Petite Pink', make most satisfactory subjects for the shadier portions of the rock garden. This primrose gives a display of bright pink flowers early in the season, April into May in Vermont. It makes a stunning color combination with white *Draba carinthiaca* and purple crocus.

This primula is a Himalayan species that grows in a tight clustered crown of glossy pointed leaves four to six inches high ('Petite Pink' is smaller). After the early period of bloom it sets seeds which ripen quickly, probably in memory of its alpine home at 10,000 to 12,000 feet throughout Kashmir and Afghanistan. The seed capsules are red and are not unsightly in the garden. One must

be watchful if one is to gather the seeds, as the pods burst quickly. The most attractive foliage remains handsome all season.

Much has been written about the need of certain plants for lime, their tolerance or their disregard of it. It is true that many plants adapt themselves admirably to a wide variance of pH in the soil, and *P. rosea* seems to be one of these.

It is planted in several locations here, under a spruce, in the nursery under deciduous trees, and at the foot of a low retaining wall in the terraced auricula garden. Above it in the crevices of the wall are plants of *Campanula garganica* to give a summer display. The terrace has a deep underlying bed of ashes piled there by former occupants of our 186 year old house, so that there is a lime reaction as well as perfect drainage. The foliage of *P. rosea* growing above this layer of ashes is a brighter green, the flowers are more colorful, the stems are more rugged, and the plants develop larger clumps. So I would suggest such a base, with top soil fertilized with well rotted (or dry) cow manure and a mulch of leaf mold. *P. rosea* is the only member of its section that I mulch with this medium. All others are mulched with our native Vermont gravel, which is largely granitic glacial debris. Indiana limestone chips make the best mulch for the smaller alpine *P. glaucescens* which is also an early bloomer with clusters of blue-lavender flowers, as well as for the garden auriculas.

P. rosea grandiflora should be divided directly after the seeds have been gathered. The roots are wire-like and tightly bound together. It is not easily pulled apart, but the effort is worth while as the divisions quickly put forth new leaves and develop into fine plants for another early spring display.

THE 1961 SEED EXCHANGE

THE SEED EXCHANGE next winter will again be handled by Bernard Harkness, who is largely responsible for its growth from a very modest operation to one of the principal activities of the Society. To Mr. Harkness and to Dr. Kruckeberg and his cohorts we are indebted for a list of rarities unequalled by the offerings of commercial sources or botanic gardens, and rivalled only by the lists of our fellow societies in England and Scotland.

In the past, Mr. Harkness gave first choice of seeds to contributors to the Exchange, and we assume that he will continue to offer this inducement to share one's wealth with other members. As Dr. Kruckeberg points out elsewhere in this *Bulletin*, the number of contributors was the lowest in a number of years. Probably a bad season was in part responsible, but in some cases former contributors simply did not "get around" to sending in any seeds. We hope that there will be no alibis this year, and that the 1961 list will be the longest and most varied in its history. Even a few seeds of a choice item will be welcome.

Because members are always impatient to receive the seed list as early in January as possible, it must be compiled and sent to the printer not later than December 1. All seeds (or if that is impossible, lists of seeds to be sent) must be in the hands of Mr. Harkness not later than November 15, if they are to be included in the listing.

Please send your seeds, promptly and generously, to

Mr. Bernard Harkness
5 Castle Park,
Rochester 20, New York

"MAINE IN CONNECTICUT"

HENRY R. FULLER, *Fairfield, Conn.*

EARLY LAST AUGUST I made my first trip to Mt. Katahdin and its area, fell completely in love with it, and hope to go back often. I have made myself a Maine garden in which I am experimenting with growing northern plants in southern Connecticut (with theories regarding their needs), and up to now they look very happy. There is no doubt about the twin-flower *(Linnaea borealis):* since August it has grown like mad and has actually bloomed a little. Of course I shall have to wait a year or two for even the twin-flower to settle down, but the plants all look very much at home now.

I am particularly determined to make the creeping snowberry *(Chiogenes hispidula)* happy. In Maine and New Hampshire this summer my heart was completely lost to it as it ran around among the mosses on rocks and logs, and I have made the same kind of place for it to run around in. Above all, I want this merry little green imp to be at home with me, and I studied as carefully as I could the places it grew in. I found the most white berries where it was growing on a big rock by the side of the road in a lot of sun. This was my hint: the rock would be slow to heat because it was protected from the sun by mosses, leaves, and the matted snowberry, yet the sun would induce thick growth and flowering. Down here I don't dare give it that much sun, but have approximated the conditions for one plant. Others I have put in deeper shade.

In an area under a hemlock, two fine firs, and white pines, close to a flagstone terrace, I am assembling the finest collection of moss- and lichen-covered stones, rotting logs, old fern hummocks, rotting and moss-covered stumps, oak leaves and pine and hemlock needles, and mosses, mosses, mosses, that I can find and cart away. I had no idea how varied and beautiful are the mosses in thick woods and small streams. When possible I move rock and moss together; but I have been delighted to find that sometimes mats of green moss, carefully removed and placed on a damp stone with a light sprinkling of leaf mold, have taken hold and are now *firmly* attached to their new stone and are growing.

Half of my theory is that if I can produce an environment in which mosses grow rampantly, not just enduring their surroundings, the northern creepers will flourish there. Another part of the theory is that large stones protected from the rays of the sun, and treated with daily mists of cool water, will help maintain the soil coolness neeeded by the creeping snowberry and its playmates.

I am also moving with the desired plants, whenever possible, some of their close associates, taking up solid mats and not removing hastily the common plants and weeds. I am especially happy when this happens to give me some of the local dwarf blueberries, which I love in their own right anyway. Some of our native azaleas have come into my garden just because they were growing in the leaf mold and rotted fern hummocks I needed, and came along with them. At present they all look happy.

After *Chiogenes hispidula,* I am most eager to grow well *Linnaea borealis, Cornus canadensis,* (the mountain cranberry) *Vaccinium vitis idaea minus,* and what I took to be *Dalibarda repens.* Nobody brags about the last, Wherry's "star-violet," but a patch of it blooming in a dark, damp, mossy, coniferous woods betweeen Millinockel and Katahdin was an exciting experience. We never saw it again, and I had never seen it before, and did not know what it was. It was lovely, and I will be proud if I can grow it.

All the plants mentioned look contented now, and *Coptis trifolia* seems to offer no problem. If anyone in the Connecticut-New York-New Jersey area is growing these plants, I should like to know who and where, so that we may compare notes.

(Originally scheduled for publication in the April, 1959 Bulletin, Mr. Fuller's account of the first year of his experiment was crowded out by longer articles. It seems fitting that a report on the successful second year of the garden be included with that of the first.)

Thangskiving, 1959, a beautiful day in Southern Connecticut, and a good day on which to report on my Edge-of-the-Northern-Woods Garden, which is now fifteen months old, and the growth and health of the plants in it. This is just a small spot on our place, and visitors vary greatly in their reaction. Some like it best of all, some would pass without knowing it was there—if I'd let them. For me, it has been for these fifteen months a source of continuous pleasure and satisfaction. That friend pleased me most who remarked that it looked like something that had been carefully preserved, untouched, rather than something made and planted. No natural spot in the woods anywhere would have growing together all the things found here, yet the first thing to catch your attention would be the generally wild and natural appearance, and the mosses of varied textures and shades of green on rocks, old stumps, and rotting logs. And any seeing eye would be caught by the old encrusted lichens on the rocks prominent along the irregular edge of this wild spot.

One of the saddest sentences in garden literature is the opening of the short paragraph on lichens in *Taylor's Encyclopedia of Gardening*: "Lichens: Curious flowerless plants of little interest to the gardener". I find this sad because I fear Mr. Taylor is correct about "the gardener"—but if this is so, "the gardener" doesn't know what's pretty. In the damp woods near the base of Mt. Katahdin, as in the tramp from Twin Pine Camp to Katahdin Stream Camp Ground, the mosses and lichens and their cousins were continuously exciting and beautiful. In Southern Connecticut they do not flourish with the same luxuriance, but beautiful and exciting they are if you know where to look, and I continue to collect movable stones and logs with examples of the most beautiful and carefully place them where they will continue to flourish; which emphasizes that this wild garden of mine is a rock garden, but a rock garden of a specialized kind which I find most rewarding. I have come to love, for their own sake, the peculiar and varied beauties of rocks and rotting logs and tree stumps, the vivid winter and summer greens of the mosses, and the amazing lichens and fungi—but it also happens that these beauties constitute the natural growing environment of the Northern creepers like the twin-flower and snowberry; "all this and Heaven too"—and shortia and trailing arbutus besides.

In the first fifteen months the most decided success and most vigorous grower has been the twin flower (*Linnaea borealis*). The first compact clump from the North promptly started sending out long runners, ranged rapidly, thickened into a big mat, bloomed in the Spring and again in August—a reaction, I suppose, to the long growing season. So far it has given no sign of its reputed difficulty. A cutting made in March grew this Summer into a sizable little plant now in a friend's wild garden. This Thanksgiving I have made cuttings which I hope to take to the Spring meeting of the A.R.G.S. as potted plants for members who would like to try them. I brought from the North, and planted, what I thought was a large number of seeds. Only one germinated, but that grew quickly into a good plant which is starting another colony in a different location. Does the twin flower make few good seeds, or do I not know how to make them germinate?

My father used to say, "Plants don't like dirt, and if you give them enough dirt it will kill them." When he planted a rhododendron or wild azalea, he would explain, he dug a big hole and threw *all* the dirt away. And what

holds the plants up? "Oh," he would say vaguely, "any old rubbish, or leaves, or waste out of the barn, or stuff like that." This in general is the theory of my garden with one important exception—dig no hole. Nature dumps its old leaves and logs and "stuff" on top of the ground and rocks. Not having as much time and patience as nature, I have to select and dump more carefully.

Everything in this garden is planted well above the surrounding terrain, and the garden is itself a series of hills and valleys. Everything is moist and damp, with perfect drainage. So, my twin-flower was planted way above the original ground with *no* dirt, just quantities of rotting wood, old fern root, leaf mold and growing moss, under the outer edge of the hemlock, with quite a lot of light and filtered sun. Its runners seem to have grown in all directions, out to more light, and in to more shade.

It takes sharper eyes to pick out the cherished, but less rampant, creeping snowberry (*Chiogenes hispidula*). On this planting among mosses it has grown happily in the hot Summer, which I had most feared, but suffered from the cold-without-snow-cover, which I had not feared enough. I covered it with evergreen branches, but too late to prevent considerable injury. But it recovered, produced one white berry, and this summer made good new growth. The best plant is the one on top of the big stone and nearest the outer edge and the light, but well protected from hot sun. I hope this winter to compensate for the lack of snow cover and take it safely through to spring. One white berry from Maine germinated one little plant now about an inch high and good plants can be bought from the Sky Cleft Gardens.

The *Cornus canadensis* bloomed this spring somewhat tentatively and made no berries—but its stolons have been spreading about all year and the plants seem firmly established. The fall leaves are still lovely this Thanksgiving. Cuttings seem to root quickly, and I have little plants from its red berries.

The Gold Thread this spring was barely noticeable, but it must have been busy underground all summer and its glistening little leaves have been popping up in a spring-like growth this fall. It seems to have picked out a spot it likes and to have moved over there in force.

Least successful has been *Dalibarda repens*. The collected plants are barely alive. A plant bought this spring from the Sky Cleft Nursery in Vermont is doing better. It actually squeaked out a bloom this summer, but an insignificant bloom. But I cannot forget what I once saw and will keep trying if Allen will sell me plants next Spring.

The dwarf mountain cranberry *(Vaccinium vitis-idaea* var. *minus)* true to its nature, is growing slowly; it bloomed, produced a few red berries which disappeared before I could harvest them. But half-ripe berries collected on Mt. Katahdin (too green, I feared) have given me a couple dozen little plants, about an inch tall now.

To keep the Northerners company there are friendly wintergreen *(Gaultheria procumbens)*, a small rock-clinging fern, and *Chimaphila maculata*. From the South, from the Gardens of the Blue Ridge, clumps of shortia and trailing arbutus seem to be settling down peaceably with the Northerners. No sectional animosities have developed so far, but the twin-flower has to be forcibly restrained from running over the mountain cranberry and the dwarf blue berry from Katahdin. There is one thick patch of the usual small-leaved partridge berry, and another patch of a large-leaved form, which I ran across near Lake George. If you have not marvelled at the beauty of the small wax flowers, do not let another season pass before doing so—but you will have to kneel to see them, and watch for the blooming season.

Nearby, a very miniature mountain plateau, with very different soil and situation, more gravelly and sandy, contains a small planting of the more arctic plants brought from the summit plateau of Mt. Katahdin. Of these, few comments seem desirable until they have time to decide definitely what they are going to do. I did not dare give them as much sun exposure as they get on their cold and often misty mountain top. The *Diapensia lapponica* is still there, but I fear it is getting smaller. The dwarf *Potentilla tridentata* seems safe enough. Another awaits a visitor to identify it. I do hope to cheer and inspire the lonely diapensia with the company and example of one of its few relatives, the *Pyxidanthera barbulata* which seems to be thriving in the Jersey sand barren section a few feet away at the edge of the pine trees. Since last spring it has looked happy—but will it bloom next spring in its new home? It is growing in New Jersey soil.

FOUND — CASSIOPE MERTENSIANA

MARGARET WILLIAMS, *Reno, Nevada*

IN THE October 1959 issue of the *Bulletin* I described the Ericaceae that I had seen growing in the Sierra Nevadas near Reno. At the time the article was written, *Cassiope mertensiana* had been reported in the area, but it had eluded me. After a long search, success came at last in mid-July, I found white heather!

The first sight of the tiny plants peeping out from under big granite boulders and following along fissures in the rocks was not an impressive one. The olive green foliage was drab and the flowers were not conspicuous. But on closer inspection, they are thrilling beyond words. Each creamy white bell wore a 5-pointed scarlet calyx as a cap and was borne on a short scarlet pedicel. Four or five flowers topped a four to six inch stem, the lower part of which was clothed with closely imbricated scale-like leaves. The dainty flowers mirrored in the icy blue waters of Star Lake were an unforgettable sight.

Star Lake lies south of Lake Tahoe at an elevation of 9,250 feet at the foot of a peak in a basin carved out ages ago by a glacier. The white heather plants grew along the lake shore and then followed the rocks up the steep hillside for several hundred feet. In some places the plants formed mats a foot or more across. Water from the melting snow banks on the crags above was trickling down slowly over the rocks.

Growing nearby were dwarf huckleberries, *Vaccinium nivictum*. The plants were rarely over 3 inches tall. Many of them were hugging small mossy rocks and had quite a windswept feeling. The charming miniature flowers had a faint pink flush. They are supposed to bear a blue-black berry which is sweet and palatable.

Then, as we say in Reno, I hit the jackpot. The next week I found white heather blooming under similar circumstances at the same elevation about ten miles south at Winnemucca Lake. Several weeks later I saw plants along the shore of Terrace Lake in Lassen National Park in the Cascade Mountains at an elevation of 8,000 feet. A herbarium specimen reports white heather in Nevada at Price's Lake—this is only a few miles from Reno far down the eastern slopes of the Sierras at an elevation of about 7,000 feet. This I will have to see! All of these lakes are at least an hour and a half's hike along fairly steep trails. These trails wind through beautiful primitive forest areas and spectacular views surround you all the way. In open spaces, other wild flowers are in profusion and the hillsides are natural rock gardens. Each hike is as enjoyable as the reward at the end.

MUSCARI OR GRAPE HYACINTHS

R. GINNS, *Desborough, England.*

SOME OF THE grape hyacinths are amongst the earliest, easiest and loveliest of the spring bulbs. At the same time they should be planted with discretion, otherwise certain of the species can become unmitigated nuisances if they get amongst less prolific bulbs or choice alpines.

The common name is derived from the fact that the bells are usually carried in close bunches, to resemble an upright bunch of grapes. They are differentiated from the closely related *Hyacinthus* by the bells having a constricted mouth whilst those of Hyacinthus are open lipped. Perhaps I can open this account by mention of a Hyacinthus which I grew for many years under the impression that it was a Muscari, being misled by the resemblance of the spike to those of Muscari.

This plant is *H. azureus,* one of the earliest and most delightful harbingers of spring. During most years I can find a few of its flowers open on New Year's Day, although the time to see it at its best is in February along with the snowdrops. Indeed, those who are fond of colour grouping would find it very satisfactory to have a wide planting of *H. azureus* and *Galanthus nivalis* on the outskirts of the rockery. Both enjoy the same conditions of light shade, and left to themselves, will increase and intermingle, to give in the dawn of the year a carpet of azure and white. The plant itself is neat and dwarf, not exceeding about four inches, with a head similar to that of a *Muscari* 'Heavenly Blue' but azure blue in colour. It does not appear to form bulbils like some of the Muscari but spreads easily by self sown seedlings. Thus it can easily be kept in check if necessary by cutting off the faded flowers.

When we come to Muscari we can divide them into two groups: those that increase too freely and those that don't increase at all when left to their own devices. The best known species is *M. botryoides* according to Farrer, or *M. botrioides* according to Sampson Clay. It is usually offered as the variety 'Heavenly Blue', although Clay says that this is actually a form of *M. conicum.* As is to be expected from its cheapness this is the species that propagates itself inordinately by bulbils formed around the base of the parent bulb. These are very loosely attached and are the size and colour of a grain of wheat. The eradication of this species from places where it is not wanted is an almost impossible task for this reason. Some of the bulbils appear to remain dormant for some time and then start into growth when conditions are favourable. I find the simplest way to deal with them is to remove the whole of the soil in the area infested and to replace it by fresh. In the shrubberies adjoining the rock garden it can be left to multiply and to give carpets of bright blue in March. There is a white form which is not so prolific.

An alpine relation of *M. botrioides* is *M. heldreichii,* with larger flowers and broader whitish teeth. It increases freely by self sown seeds, but not so much by bulbils. Far more suited to the rock garden where it never makes a nuisance of itself, is *M. aucheri,* very close to the latter but much dwarfer, not exceeding three inches in height and with the bells carried in a close round head.

Quite distinct is *M. racemosum* with narrow rush-like leaves that are in evidence for most of the year. By division of the bulbs good sized clumps are soon formed from which a sheaf of flower stems ascends carrying blooms of a much deeper blue than any of those previously mentioned. The stems are quite long and the flowers are therefore very useful for cutting. As all the

new bulbs remain in a tight clump they can easily be removed when not wanted and so are quite safe on the rockery.

Somewhat similar is *M. armeniacum,* with long dense spikes of medium blue. There are several forms in cultivation, one of the best of which is a darker blue which enables the white rim to show up to advantage. *M. schliemanni* is rather leafy, with fragrant flowers of a rather dull blue-purple. But it has the advantage of flowering in midwinter, well in advance of other members of the genus. *M. argaei* is another member of the *armeniacum* group, neat and dwarf for the front of the rockery. My original plants of it were the white form with close little heads of white with a hint of yellow about them. But many of the seedlings came blue, very much like *Hyacinthus azureus.*

All the above are easy and can be quickly increased. Those that follow I find need propagating by saving the seeds and sowing in pans. They are larger and sturdier in habit and look well even as individuals. Many of them have both fertile and infertile flowers on the same spike, the fertile ones on the lower portion. This is particularly the case with *M. comosum,* with tall stems on which the lower flowers are red-purple bells whilst the spike terminates with a kind of brush of pale colored sterile flowers. Related to it is *M. plumosum,* the so-called 'Feather Hyacinth', for which the common name is sufficient description.

M. latifolium, syn. *M. paradoxum,* has a stiff twelve inch stem with a head of dark blue urn-shaped flowers. There is a single broad, stem-clasping leaf which might possibly be mistaken for a tulip leaf. *M. neglectum* has similar ample foliage whilst the flowers are such a dark blue as to be almost black. These two species I find are much beloved by slugs and are often damaged. I first saw and fell in love with them in the alpine house at Cambridge Botanic Gardens where they helped in a very colourful display in early April.

M. moschatum is dwarf, with dingy purple-brown flowers. It redeems itself from insignificance by a strong scent of spicy fruit. A very much better plant is *M. macrocarpum,* related to the foregoing but with flowers of a good yellow. These species are not a success in cold wet soils.

In all there are about fifty species of Muscari, many of which I have not heard of in cultivation. Those mentioned above I know from personal experience and I doubt whether the others differ so widely as to make their acquisition a matter of urgency.

AN IDEAL ROCK GARDEN ASTER

CAROLINE DORMAN, *Saline, La.*

Aster linariifolius seems to be quite popular as a rock garden plant, but the common form is rather tall for this purpose, as it is often twenty inches in height.

West of the Mississippi there is a form which is much smaller, and which differs in other ways. The rather stiff stems are from six to ten inches tall, clothed in tiny rigid leaves. Those on the lower part of the stem are linear, while on the upper they are almost hair-like. The stems are branching, forming clusters of bright lavender flowers which cover the upper part of the plant with a mass of bloom. The disk-flowers are bright yellow, adding to the charming effect.

This is especially desirable for its late-blooming—the very last of October, carrying over well into early November. The flowers last well. Its natural habitat is a well-drained slope, in clay, among iron rocks. It is not in the least affected by droughts.

Caroline Dorman

The dwarf western form of *Aster linariifolius*.

The known form of *Aster linariifolius* is called "Savory-leaved Aster". If there is any suggestion of a savory aroma about my little pet, I cannot detect it— and I have a keen sense of smell! There are so many differences between the two plants that it would seem that this western form should be listed as a different variety. I cannot give its range, as I have collected it in northwestern Louisiana only. It deserves to be better known, as it is a perfect rock garden plant.

NEW ENGLAND REGIONAL GROUP

RUTH M. MANTON, *Chairman, Durham, N. H.*

MANY OF the members of our group live far apart. Long distances must be travelled in order to join together Vermont, New Hampshire, Maine and Massachusetts, with Connecticut east of the Connecticut River. Plans to make new regional groupings may give us even more territory.

Reading Groups are being organized among the members of the Unit, with special emphasis on members that have joined since 1956. Any member may join the groups, however, by sending a note to the chairman of the New England Unit. The groups will be in the form of Round Robin Reading Circles with six members in each circle.

The periodicals that are available to the circles are: *Bulletin of the Alpine Garden Society* (2 subscriptions); *Journal of the Scottish Rock Garden Club* (2 subscriptions); *Quarterly of the American Primrose Society* (1 subscription).

The following back issues of Bulletins are available: American Rock Garden Society (not quite complete); The Alpine Garden Society (not complete). The Scottish Rock Garden Club (not complete); and the American Primrose Society.

We would like, at this time, to thank all the donors of these back issues and to urge members to take advantage of them and join a reading circle. Two circles have been organized and another soon will be filled. Round Robins are indeed very fine, but we believe that there are still persons in our Unit who would like to be more active but who do not like to write.

ALPINE MEADOWS – WHERE TO GO AND WHEN TO GO

RALPH BENNETT, *Arlington, Va.*

IN THE June, 1950, issue of this Bulletin there was an excellent article by Dr. Worth setting forth some of the best places in our western mountains to see alpine flowers and rock plants within easy walking distance of a car. I am writing now about alpine meadows. Everyone who is planning a trip west and who wishes to see some alpine meadows in bloom should consult such an article first. If you don't get the advice of a person who has actually been over the various mountain passes as to which ones are worth visiting and which are not, you are inviting disappointment, because roads which look on the map as if they lead through alpine meadows, judging by the elevation, often do not. I learned this to my sorrow in the summer of 1958 in a nine-weeks tour of the West. I was one of the foolish ones and hope I can spare other people the same disappointment.

The principal places that Dr. Worth recommended for alpine flowers were the Beartooth Plateau, on Rt. 12 leading northeast from Yellowstone Park; the Snowy Range of the Medicine Bow Mountains on Rt. 130 west of Laramie, Wyoming; Loveland Pass, Colorado; and Pike's Peak. I should like to add a few others, which no doubt were omitted by inadvertence, since I am sure Dr. Worth will agree with me in recommending them.

The Trail Ridge Road, Rt. 34, in Rocky Mountain National Park, being for eleven miles above 11,000 feet elevation, must go through many good alpine

meadows. I have not been there, but it is similar to the road over the Snowy Range, which I have seen and which was out of this world. A wonderful trip could be made starting at Laramie, going west over the Snowy Range, then turning southeast all the way through the long Walden valley to Rt. 40, thence north on Rt. 34, the Trail Ridge Road, and out through Estes Park. All of this could be done in one day, but it would be more enjoyable in two.

Logan Pass in Glacier Park is one of the best bets. Not only are there alpine meadows starting right at the parking area, but there are good trails running off both north and south along the crest of the Continental Divide which will lead in just a short distance to plants not found in the damp meadows.

On Mt. Rainier the Skyline Trail, which begins at the Lodge in Paradise Valley, leads up the summit cone as far as one wishes to explore and has alpine flowers all along its course. It is an open trail, easy though steep, and gives fine views out over Nisqually Glacier.

The Big Horn Mountains in Wyoming have a quite good alpine meadow which is crossed by Rt. 16 between Buffalo and Worland. The plants are not as alpine as in some of the higher meadows (this being only 9000 feet), but there is plenty of color.

Now as to some which are not so good: The high passes between Ouray and Durango in Colorado, which Dr. Worth was not impressed with, produced the same effect on me. Only one real meadow was seen in the three high passes, and this one, when I was there in late June, was completely occupied by dandelions.

Tuolumne Meadows, on the Tioga Road from Mono Lake into Yosemite Park, did not look promising to me on the Fourth of July, when any good alpine meadow should be at its best. There was hardly any color.

Route 40 between Denver and Salt Lake City goes over some high plateaus and some higher passes, but I would not call it good hunting ground for alpines. Very little color was seen by me in July.

Of all the alpine meadows which I have visited, I liked the Snowy Range best. This may have been because I got there at just the right time and to the others at not the best time. But I rather think the display there is superior. I saw there both of my favorite alpines—eritrichium and rydbergia. Dr. Worth spoke highly of this meadow too.

Picking out the right places to go is the first essential step, but it is not the only one. Equally important with choosing the right places is the timing. If you get to an alpine meadow at the wrong time, you may be just as disappointed as if you had gone to the wrong place. Every meadow has a period when it is covered with flowers and other periods when it is almost as barren as a sagebrush desert.

For example, those of my readers who belong to the American Penstemon Society and have read the story of my 1958 trip must have noticed that I complained unfairly about the famous Beartooth Plateau being not what it was cracked up to be. Dr. Worth tells me that this was because I got there too late, after sheep had eaten the plants off to the ground. If I had gotten there a month earlier, I would have seen an equally good display with that on the Snowy Range.

How does one know what is the right time to visit an alpine meadow? I would give as a good rough rule that we should get there as soon as we can after the snow has melted off; and that is usually between the middle of June and the first week in July. The time of the melting of the snow varies from

year to year and place to place. I have read stories in this bulletin of meadows being still covered with snow in August. But unless one knows that a certain meadow is in the latter category, the chances are against finding a good display of alpine flowers even as late as the end of July. This is especialy true where sheep can get to the meadow, and where is there a mountain meadow that is safe from them?

Considering the fact that some meadows are at their best in June and out of bloom in July, while others are still buried under snow in late July, it sounds like an impossible task to guess when we should go to any particular meadow if we have not been there. This may well be the case. If you are going to be restricted to one or two places, the only safe thing to do is to ask advice of someone in a class with Dr. Worth, someone who has been to most of our alpine meadows. Readers of this *Bulletin* will know a number of such persons. If, however, you are going to visit many high passes, you have a pretty fair chance of getting to one of them at just the right time to see it at its best. That was my experience in 1958, when out of eight high passes visited, only two of them had a good display of alpines, but those two were wonderful.

If you have no choice of time and have to go late or not at all, I would say, go ahead but be conscious of the possibility that the flowers may either be out of bloom or eaten by sheep in many of the places visited. Try to get to more than one meadow. You may be lucky enough to find one where the snow has melted off just recently and where the display is good.

CENTAUREA UNIFLORA

GRACE F. DOWBRIDGE, *Springvale, Maine*

THE SPECIES *Centaurea uniflora* was new to me when a small packet of seeds came my way, but the descriptive name sounded interesting, and I am fond of the more common and well-known species of Centaurea. Only one seedling appeared the first spring, and I tried to watch over it; but I was away from home a lot that summer, and after one spell of hasty weeding in the frame, I found to my dismay that I had pulled up the infant. However, the following spring one more solitary seedling came up, and this one I grew to maturity and bloom and found a fascinating plant for the rock garden.

The foliage is handsome, soft felty gray in a low basal rosette, very effective all season. The flower stems grow to only some eight inches in height, with several of the solitary showy flower heads in bloom in late June. (It may grow taller the second year, but I am hoping not.) The flowers are large in comparison with the low plant, two inches or more across, and very lovely in feathery light purple, or the color called rose-purple, with large marginal florets in the manner of the well-known basket flowers.

The calyx is the familiar brownish-black cross-woven "basket", appearing the same in bud as when developing seed, and so slow to show any sign of a flower developing that I was afraid the bud had blighted.

My plant has been moved several times and seems perfectly easy to handle, and apparently hardy in the Maine climate. Its first location was among larger plants but it is now established higher up in the rock garden, where its gray leaves and lovely flowers will show to advantage against a dark gray boulder. I should like to know more about where and how this charming plant grows in the wild.

W. E. TH. INGWERSEN

THE VETERAN British alpine nurseryman, Walter E. Th. Ingwersen, died last winter after a long period of ill health. In conjunction with the late Dr. P. L. Giuseppi and others, he made extensive collecting expeditions, particularly to the Balkans and Caucasus, and was largely responsible for the introduction of many valuable garden plants. His nursery at East Grinstead, Sussex, was the home of an incredible number of choice rock plants, many of them unobtainable elsewhere. During a tour of this country a few years ago, many members of the Society had the opportunity to make his acquaintance. He never achieved his great desire to write a compact handbook dealing with all the rock plants of his acquaintance, and much of his vast knowledge has perished with him.

A FEW PLANTS OF THE ROCKY MOUNTAINS – II

CHESTER K. STRONG, *Loveland, Col.*

I do not know with exactness what constitutes a depauperate plant, but in this case, the term may be applied somewhat erroneously. Although the plants, with shining handsome green leaves, white below, and with generous flower clusters, appear to be but two to three inches tall, if the inquisitive visitor gently lifts the tip of a plant he finds that the upright plant is but a portion of a prostrate stem which may be twelve inches or more in length and may support a number of clusters of leaves and flowers. The stem creeps above the soil, not below. As the plants grow in open bogs and along lake shores where the snow collects to great depth, snow pressure may possibly be the factor which causes the plants to assume their prostrate posture, having learned that if they keep their charming heads low in the world their lives may be happier and more extended. Some of the very dwarf willows, forming miniature two inch high matted forests in the alpine zone, resort to this same plan, but their prostrate stems may be several feet in length. Quaint are the diminutive willow forests at seed time, for their catkins are as large as, perhaps larger than, those of related shrubs of normal height.

Kalmia has another unusual device, which concerns the filaments and anthers. A pit is formed in the petal into which the anther, attached to the filament, snugly fits. As the flowers expand the elastic filament is stretched in tension and at the proper time, when the petals are irritated by a fly or other pollinator, the anther lets go with considerable force, setting up a bombardment of pollen grains. Kalmia is not always alpine, being found often in subalpine situations, a few hundred feet below timberline.

An undershrub of forests at lower altitudes, and a most attractive plant, is the humble bearberry or kinnikinnic, *Arctostaphylos uva-ursi*. This could safely be called a shrub neglected by gardeners. Its distribution is not limited to the Rocky Mountains or to North America, for it, or its near kin, is widely distributed throughout the arctic regions of two continents and the mountains of Europe.

At times this small prostrate vine-like shrub has a frowsy bearing, with brown leaves, and a general appearance of unhappiness and distress. The shrubs are pioneers, a tendency which takes them into lean soils where moisture is often at a minimum. Under such conditions they do not always bear flowers or mature their brilliant red berries. Surely shade is not one of their requirements, yet the

handsomest plants are found beneath widely spaced ponderosa and lodgepole pine, or other conifers, where some moisture drains to them from higher ground. When introduced to a garden, an excellent situation is on a bank or wall at eye-level, for otherwise their small flowers are seldom admired.

Leaves are well-shaped, glabrous and rather brilliantly waxen on the upper surface, and berries, often carried through the winter, are brilliant red, roundish, containing numerous seeds which are nutlets of uneven size and shape. Where the plant grows well naturally, as in our mountains, it is used often for decorative purposes and shows well against any suitable background material. As the plants are creepers, forming strands three or four feet long, not always putting down nodal roots but lying very close to the soil, their point of greatest beauty, their flowers, is not often noted. In form these are miniature jugs or urns, attached at the broad end, with exquisite coloring and the texture of very delicate wax or porcelain—rose, pink with white, or white, beautifully blended. I suppose one may just as well come out with it—they have every appearance of having been designed and shaped by hand—purely elfin. It does not transplant well, if at all, from its native habitat, and seeds do not germinate with any predictable regularity—if they ever do. A federal building program near the mountains, its grounds to be treated with native plants, has taught nurserymen, I am told, that plants do come quite readily from greenwood cuttings.

Another shrub, found usually a little below timberline, but often in the alpine zone, is the mountain dryad, *Dryas octopetala,* by no means a rare plant in the North Temperate Zone, but not grown in gardens often enough. In attractiveness the dryads are variable, depending on what constitutes their environment. On the high peaks at 12,000 to 13,000 feet, or even higher, they are often in distress, as they choose situations which tax all their resources merely to maintain themselves in such a precarious habitat. Except during years of extreme moisture plants in such pioneering situations show browning and immaturity of foliage, paucity of flowers, with those developing small and ill-formed, and an aspect of general raggedness. It is probable that only during the wet years they are able to make a little growth, merely sitting tight and attempting to maintain themselves during the lean years.

In an open basin near Irwin Pass, where no trees intrude and where gigantic boulders in milleniums past have tumbled from the flanks of Torrey's Peak, to be scoured by weathering and later to be embroidered by beautiful forms of lichens and to become almost buried by wind—and moisture—carried soil and humus, grow very handsome fields of dryads. It appears fitting to sing a song of praise for these particular plants, for they grow under what are probably ideal conditions. The plants are inclined to grow in masses, being gregarious with their kind but resentful of foreign interlopers. Well grown specimens reach a height of eight inches or less, depressed and somewhat spreading, but neat. They have a liking for the edges of boulders where they receive run-off moisture and the soil is of good quality, often enriched by the manureal refuse of marmots and other small creatures.

The leaf of a dryad is a perfect creation, a form which a silversmith or goldsmith would choose to reproduce in his medium; there is evidence that this has been done, with the form remaining true and not conventionalized. The upper surface is not brilliant green, but a rather dullish hue, yet handsome, with the veins very evident, pressed in above but showing below on the white-tomentose undersurface. The leaves remind one of oak leaves done on a miniature scale, one-half to one inch in length. As the plants grow in the neighborhood of boulders, it often happens that the eight-petalled creamy white flowers are displayed against the handsome texture of the aged rocks. In the small basin men-

tioned, covered over in winter by thirty to sixty feet of snow, it is not surprising that the turf is perfect, and that for the display of the handsome boulders and the dryads no better arena could be devised. One recalls similar perfect arrangements with pleasure: I hold in mind one of twinflower, *Linnaea americana,* spreading its delicate growth across a polished purple boulder which lay in the water of a tiny stream that here spread out into a tiny pool which reflected the twinflowers and the shading willows above, creating perfection in design.

Seeds of the dryads are in clusters when ripe, made up of individual fruits each with a plumed style, tortile in form, twisted as a corkscrew. The seed leaves the parent plant to be carried some distance by the wind, and if by chance it makes landing on sandy or moist loose soil, it begins boring in, with the augur action produced by the pressure of the wind against the plume. Seed of cercocarpus, mountain mahogany, a coarse shrub common to the foothills, is similar, and it is not an uncommon sight to see them being wind-planted.

A step forward could be accomplished if authors of manuals would come to agreement on the folk names for dryas and for *Sieversia turbinata,* which often are companions on the heights. Some writers term *Dryas octopetala* mountain avens, while others apply the name to the sieversia, which in many areas is the commonest plant above timberline. *Sieversia turbinata* is not a shrub but an herb of wiry shrub-like appearance, which seldom appears below timberline, or approximately 11,000 ft. It grows in mats about boulders, often near or in low areas which are moist in spring from the snow melt, and over quite barren fields. The plant stems are often red, the foliage attractive, being a pleasing green, and the flowers a polished waxen yellow. One autumn I was in the mountains at a later date than usual and was amazed to see the peaks above me fiery red in the morning light. This I had not seen before, and, being inquisitive, I took off early the next morning. I spent an uncomfortable day, being inadequately clothed, but discovered that if the mountains are not snow-covered when the leaves of *Sieversia turbinata* turn scarlet, their crests appear an attractive autumn red. Some of the color is contributed also by dwarf vacciniums, probably of two species.

A relative, at far lower levels, once known as *Sieversia ciliata* but now in the manuals as *Geum ciliatum,* a taller plant, quite tomentose and silky gray of foliage, is most attractive. Plants which I secured a number of years ago, when they were torn from a roadside by a passing grader, have done remarkably well. The flowers are rather pendant, rose-colored, the corollas urn-shaped an inch in length, numerous. Often plants lack gracefulness by a wide margin, but this species does not. The deeply notched foliage, the habit of growth, the buds, the flowers, the seed heads all combine to add grace and handsomeness.

Three times I had been blown off sturdy Mount Parnassus as I came up from the south, one autumn day, with a cold wind of high velocity coming down from the north, before I worked my way behind the peak and the blustering, now accommodating wind neatly hoisted me up and over. There is a cirque on the south side of the peak where fresh cold water flows lazily through a bog, before it leaps down the mountainside. In this bog, as in many others, grow Parry's primroses, true primulas, notoriously poor doers in gardens, but handsome. The species is puzzling as long observation of the plants indicates the possibility that their antiquity is greater than that of many of their fellows, but no definite proof is available. They appear to be in transition now from an arctic-alpine to a woodland plant. Whether or not they are relics of an ice age or a pre-ice era is of little consequence as they remain interesting subjects. Without exception they are found rooted in cold running water (perhaps in Colorado, but not elsewhere—Editor), either in an alpine habitat or close to the upper limit of

timber. As an alpine, and as it grows in the cirque below Mount Parnassus, the plant is rather low in growth, with short, sometimes twisted stems that never reach very desperately for the sky. Comparison would probably show that the alpine plants are actually no smaller than woodland ones, that only the stems are shortened. Along the stream below the cirque, growing in the shade of conifers, the specimens are unusually handsome, and the flower stems reach a height of twenty inches, straight as arrow shafts, and bear flowers in great numbers, as do all plants that I have found in similar situations. Roots exposed in the cold water of the fast-flowing stream resemble great masses of coiled cordage.

The flowers of *Primula parryi* are red, a good red showing some magenta in age. The plants are odoriferous, a scent unpleasant to some people, which is common to alpine vegetation. In the case of the primrose the odor is not in the flowers; early in spring it is not noticeable, but as the yearly growth advances and maturity is reached the foliage is well saturated.

Associated with it in the bog are specimens of *Pedicularis groenlandica,* a plant which is probably not found in Greenland and which to us is "little red elephant," as we have formed a sentimental attachment for the species. In three ways it has characteristics peculiar to itself: undoubtedly it is at least in part parasitic, with some of the sedges for hosts; its foliage is of red-bronze, copper and deep green; and the flower resembles the head of a very small elephant, ears and tusks quite well delineated, in red, white, and lighter shades of red. There is little doubt that this is far from an ideal garden plant, unless most unusual conditions can be provided.

The stream along which the superb Parry primroses grow drops down the mountainside to join a greater stream, and a mile lower, at about 9,000 feet, there is another small bog, fed from the mountainside springs, where a colony of *Primula incana* is found. This species was for some time known as *P. farinosa,* a designation which its close resemblance to the European plant makes logical. It is not a small plant as primroses go, for its leaves are four to five inches in length, a beautiful silver grey, well sprinkled with farina. Flowers are lilac or rose, with a golden eye, on straight stems to twelve or sixteen inches in height. My opinion is that the plants are short-lived. They grow on hummocks surrounded by water and the handsomest specimens are growing above clinkers left by the locomotives of an abandoned mountain railway. These plants, which in their native habitat grow in full sun, should not be overlooked for a moist spot in the garden.

The third member of the triad of primulas to be found along the Continental Divide is *Primula angustifolia,* the primrose of the narrow leaves, an alpine plant, and one of the choicest of all alpine plants, one might well add. It is one of the smallest members of the genus, for, although some writers have indicated a height of four inches for this delightful resident of the high zone, I have found, after viewing thousands of plants, that the height of the fairy primrose remains at about two inches according to my rule. The plant forms a relatively heavy carrot with feeder roots, a crown supporting possibly a half dozen narrow leaves an inch in length, a flower stem arising from the center and usually bearing a single flower of a color deeper than pink and unusual in the great distance it can be seen on a mountainside. The yellow eye makes a nice contrast with the petal color, which on examination displays a high degree of intensity. The color fades under some conditions; when the flowers have been buried under a heavy fall of hail and have melted free, they lose their brilliance and sometimes display a chalky tone. This modest plant is one which has brought itself to near perfection.

Early in my mountain-walking experience, there were no highways cross-

ing the divide, from which representative alpine flora could be seen. Now two afford this opportunity, the road over Loveland Pass and the Trail Ridge Road which passes through Rocky Mountain National Park. When I first knew Loveland Pass, before the highway was built, it was very good hunting country. I have never cared much for plant hunting from highways, but one can see kobolds, the magnificent sun-gods, from a car on Trail Ridge, although their number grows constantly less on Loveland Pass.

I first found the sun-gods while walking. The genus at that time was Rydbergia, but has since reverted to a prior designation, Hymenoxys, so that the plant has become *Hymenoxys grandiflora* (and is listed as an Actinella in our 1959 seed list), but under any name they remain the same handsome creations. I was introduced to the kobolds as I came to the top of a mountain. Across the turfed, gently-wind-swept crest I was startled to see, in silhouette, what for an instant I believed was a group of holy men in loose gray habits, wearing huge golden sun hats, on pilgrimage to some sacred mountain shrine. I think that I was frozen for more than an instant, probably for ten seconds, and my second thought was that I had been out too long alone, had tramped too many hard miles, had placed too much altitude beneath me, and was suffering from altitudinal hallucinations, a malady of which I had heard.

Even as I advanced, the figures still resembled something other than members of a happy alpine flora. The gray habits blown by the gentle wind seemed to move the creatures about, and I was certain that the huge hats nodded at each movement of the figures. As I came closer, the illusion resolved and I found myself viewing with some lingering amazement a colony of brilliant sun-gods with wind-whipped wool of their own blowing about their eight inch figures and huge composite flowers which nodded sagely from wind pressure. In the alpine zone the plants are extremely shaggy, a characteristic which I fear they may lose at lower elevations. The plants, six to eight inches tall, bear disproportionately large flowers, four inches or more across, with rays brilliant yellow and disc coffee or cocoa brown and shading to deeper tones, all lively colors.

There is a spot on a silver stream where Mrs. Strong and I would go again to enjoy plump frankfurters cooked in a tin can, rye bread not too refined, and cheese once resident in the caves of Cheddar, together with a draught of boiled coffee from a tin. Here grows an upright young fir tree, proud in its perfection, with a garland of aromatic currant shrubs at its base. The tree stands at timberline, except for willow shrubs, and higher up on the bald mountain, the krummholz, a matted pine and fir forest doing forced homage to bitter elements on bent knees, beneath which grow gentians, their brilliant blue flowers bobbing in the teasing winds. A half mile above the fir, the stream is born of a persistent snow bank, and along its upper course can be found nubbly-foliaged *Saxifraga caespitosa, Campanula uniflora,* polemoniums, and near the snow *Chionophila jamesii,* a midget avowing nothing, merely being there to make friends of wanderers.

We would go back to see the fir, to view the perfect stream again, but we would be more nimble along the rough trail which takes us to see the mimulus, the little mimes, which line the stream, dance on the miniature sand-spits and among the rocks, dressing their lines during the summer days, small animated figures four inches tall, wearing yellow bonnets—dancing all through the brilliantly sunlighted days and through glorious nights of sharp temperatures, nodding to the rhythm of the wind and the voice of the stream. Bright lines, yellow of flower, green of foliage, touched modestly with red, living embroidery edging a silver ribbon.

SALMAGUNDI

OUR PLEA for material for the *Bulletin,* in the January number, has had little result. There is perhaps enough on hand for the October issue, which will be at the printer's before this one reaches you. But for January, the cupboard is almost bare. By late October, the copy for it must be sent to the printer, unless it, and the Seed List which is mailed with it, are to be greatly delayed. We are fully aware that few people care to take the time to write during the summer months, but please, *please,* send in an article if you wish the Seed List to reach you at the usual time.

* * *

Apparently we are almost alone—and we sincerely hope so—in finding that the past winter has been one of the most disastrous in many years. The losses in the gardens are too appalling to dwell on in detail: heaths and shrubby penstemons killed or badly damaged, *Dryas octopetala* and most of the globularias and primulas, all the cyananthus and Asiatic mertensias and gentians, *Geranium stapfianum,* and many others gone. Very few seedlings set out last year survived, and the garden is the most barren it has been in many years. Visitors will be unwelcome this season! Even in the alpine house there have been many unexpected casualties, usually of plants difficult or impossible to replace. At times like this, one feels almost tempted to abandon the struggle to keep recalcitrant alpines alive, even if not happy. Then one looks at the heavily budded plants of *Aquilegia scopulorum,* the gay daisies of *Anemone blanda,* the bright pink of *Androsace carnea laggeri* x *halleri,* and a host of other treasures, and decides that there is nothing to do but to fill in the blank spaces where possible, and to hope that the next season will be less cruel. Alpine gardening is no sport for the easily discouraged!

* * *

It is time to consider the possibility of attending the third International Rock Garden Plant Conference, which will be held in London on April 18-22 and in Edinburgh on April 24-28 inclusive, next year. A most interesting series of lectures has been arranged, together with visits to outstanding gardens, and of course the most marvellous exhibit of alpine plants, many of them of the greatest rarity, that one can conceive. It is hoped that many of our members will find it possible to be in Great Britain at that time, and to participate in the Conference. Further details will be announced later.

* * *

Miss Caroline Dorman, authority on Louisiana plants and an all too infrequent contributor to the *Bulletin,* desires that attention be called to the fact that she is no longer able to supply plants, because of a labor shortage, and that she has not had time to reply to the numerous requests for a catalog.

* * *

Belatedly, for the spring planting season, we should like to call attention to the several new advertisers in our pages. Of special interest is Thurman's Gardens, which offers some of the more elusive western natives which have been unavailable for many years. We received a shipment of very nice plants, in good conditon, the other day, and hope that other readers will become acquainted with Mr. Thurman, also with the American Perennial Gardens and, for those within driving distance, Read's Gardens.

We are still awaiting the list which Mr. Totten proposed last year of all the nurseries dealing in rock plants and in natives suitable for the environs of the rock garden. If you know of nurseries which should be listed, please send the Secretary their names.

To Dr. Kruckeberg and to the other members of the Northwest Unit who have so ably handled the task of the seed exchange for the past three years, go the thanks of all who have profited by their efforts. The Seed Exchange has become a major undertaking of the Society, one with which we cannot dispense. It is made possible largely by the contributions of a very few members. (as is also the *Bulletin*); without their contributions the seed list (and the reading matter) would be slim indeed. More contributors to both are badly needed. It is a simple matter to carry a few coin envelopes (and a pencil) when making the rounds of the rock garden, and to pinch off and packet whatever seeds may be ripe at the moment. Less than one third of those who receive seeds send in any in exchange (while the percentage of those who contribute to the *Bulletin* is far lower). How about behaving like a pack rat this season, leaving something in place of what you take away?

* * *

Occasionally a complaint is received that the names in the seed list give no clue to the nature or desirability of the species listed there, with the request that brief descriptions be given. Unfortunately this would add so much to the labor and cost of the list that it is at present unfeasible. Usually the protests have come from gardeners of limited experience, yet in recent years some of the names would baffle an expert, unless he had all the resources of the Bailey Hortorium in which to check—and even then he might occasionally have to concede defeat. If you are sending in seeds of something not mentioned by Farrer, Correvon, or Clay, or if the plant is the victim of a recent and not generally known change of name, a note for publication in the *Bulletin* would be most helpful, especially if it can be sent by mid-October so that it will appear simultaneously with the Seed List.

* * *

At last—May 16—we have completed the sowing of seeds—we hope. Those who disapprove of our fruit jar method will be happy to learn that we have gone back to the older method of pots and frame, but not because of failure of the jar experiment. There were far too many seeds on hand, the supply of jars became exhausted and wholesalers could supply no more (we must remember to order them during canning season this year). The quick-germinating, the less precious, and a few of doubtful viability were perforce given cavalier treatment; comparison of the results will be interesting.

BACK VOLUMES OF THE BULLETIN

We have for sale an accumulation of back volumes and individual numbers of the BULLETIN. The available material is listed below.

VOLUME 1 (6 issues) $5.00 (limited supply)
Individual numbers 2, 4, 5, & 6

VOLUME 2 (6 issues) $5.00 (limited supply)
Individual numbers 2, 3, 4, 5 & 6

VOLUME 3 (6 issues) $5.00 (limited supply)
Individual numbers 1, 2, 3 & 6

VOLUME 4 (6 issues) $5.00 (limited supply)
Individual numbers 1, 2, 3 & 5

VOLUME 5 Individual numbers 1 & 6 only

VOLUME 6 Individual numbers 4 & 5 only

VOLUME 7 Individual numbers 1, 2, 3, 4 & 6 only

VOLUME 8 Individual numbers 1, 3, 4, 5 & 6 only

VOLUME 9 (6 issues) $5.00
Individual numbers 1, 2, 3, 4, 5 & 6

VOLUMES 10, 11 and 12 (4 issues) $3.50 each
Individual numbers 1, 2, 3 & 4

VOLUME 13 Individual numbers 3 & 4 only

VOLUME 14 (4 issues) $3.50
Individual numbers 1, 2, 3 & 4

VOLUME 15 (4 issues) $3.50
Individual numbers 1, 2, 3 & 4

VOLUME 16 Individual numbers 1, 3 & 4

All individual numbers are one dollar each.

A large accumulation of certain numbers permits us to offer ten different numbers, the Society's selection, for $5.00. (Order the "Bargain Package.")

Postage will be paid by the Society.

Members desiring issues containing articles referred to in the index by volume and page number may obtain the issue, if available, by referring to volume and page number in ordering.

Order from the Secretary. *Please make checks payable to* —

American Rock Garden Society

238 Sheridan Avenue Ho-Ho-Kus, N. J.