

BULLETIN

of the

AMERICAN ROCK GARDEN SOCIETY

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JULY, 1958

No. 3

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C. R. Worth, Editor

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ALPINES OF SOUTHERN MONTANA

OLGA W. JOHNSON, *Libby, Mont.*

PHOTOGRAPHS I cannot provide, nor adequate words, to picture the richness of the flora of the high northern Rockies. This will be but a sketch of some of the species encountered on a trip last summer to Yellowstone Park and its environs, from my home in the extreme northwestern corner of Montana. On the return trip we stopped at the State College at Bozeman, where Prof. W. E. Booth, curator of the herbarium, did what he could to help me with identification, within the space of little more than an hour.

Most conspicuously lovely at ten to eleven thousand feet elevation in the Beartooth country east of Yellowstone, in late July, were *Mertensia tweedyi* (*M. alpina*) and *Polemonium viscosum*, the mertensia in blue intense and pure, the polemonium tending more toward lavender and purple, but always vivid. I have grown both of these here at 2500 ft. with no special difficulty, but never have they produced in my garden the great solid bouquets of bloom that we saw on the heights. It is difficult to collect them without breaking the large deep roots. I used a 59c dandelion digger on this trip and found it the most successful tool I have tried, as it will cut sod and pry rocks; but something longer and stronger—together with a great deal more time for maneuvers—would be necessary to get to the bottom of the roots usually encountered in such clumps as these.

The most numerous blooms on top of the mountain were those of *Potentilla glaucophylla* and *P. dissecta*, certain erigerons and townsendias, and *Polygonum bistortoides*; the last with a corm-like root, not difficult to dig nor to grow, but needing to be grown in a group to make much of a showing. *Silene acaulis* was fairly common, making its best displays where large isolated plants were found in sodless scree. Its rather deep tap root was not hard to lift in this loose rock, but usually it grows in sod, crowded by other plants, so that roots were often broken off in trying to secure plants. Because of the small size and delicate coloring of the individual flowers, the silene was less conspicuous than some of the other plants growing around it.

Showy white-flowered plants, not found as commonly, were *Arenaria sajansensis*, a cushion plant, *Cerastium beeringianum* (both Booth identifications), *Draba incerta* and *Smelowskia americana*, a draba relative. The latter two have

survived in my garden from previous collections, but have never bloomed as generously as they do on high.

The creeping phlox that was fairly common at high elevations I cannot attempt to name specifically. It has silvery foliage, grows tightly tufted when crowded or on rock, but much looser and softer in other locations, and is not as prickly as many of its near relations. The largish flowers are white or pale bluish as I have observed them. In only a few places did I see this covered with bloom. Our common *P. caespitosa* (probably) growing near Libby is as desirable, and has greater color variation. It has been suggested that the Bear-tooth phlox is *P. hoodii*, but this is a small flowered plains or foothills species; Prof. Booth suggests that it may be *P. diffusa*.

It was intriguing to find in the high screes a plant up to six inches tall with bright green glabrous leaves of fair size, such as one usually associates with wet places lower down: *Senecio fremontii*. Yellow daisies seem to exert some sort of fascination over me, and I feel badly that what cull specimens of this I brought home have probably not survived. The other alpine senecio commonly seen, probably *S. bivastatus*, is in contrast densely woolly, just another instance of defiance of our insistent efforts to make rigid rules as to the effect of altitude and growing conditions on the habit of plants. Orange-gold buds increase the attractiveness of both these species.

Now for some of the truly miniature species. Even up there on the old glacial fields where they are growing by the thousands, indeed by the wide-flung miles, they are despairingly difficult to collect, because they grow jammed and interwoven in dense peaty sod, or with roots extending deep into crevices of granitic rock where no tool may follow; sometimes both these difficulties are combined in a single specimen. Add a cold, constant, relentless wind that swirls the black soil dust into one's eyes, and you will realize that collecting up here, so near to heaven in more ways than one, has its drawbacks.

Among these tiny inhabitants are some that spread into cushiony mats, others that consist of a single stem or of only a few stems or stem-branches. *Lewisia pygmaea*, *Saxifraga chrysantha*, *Campanula uniflora* are examples of the latter. I have kept the saxifrage over winter in my garden, but lost it before blooming, while the others disappeared at once. This does not mean that someone might not succeed with them, for my experience with these species has been limited. The average gardener would of course see no point in struggling with plants that give such tidbits of color. *Gentiana romanzovii* has larger flowers, but of coloring too subdued to attract more than a devoted few—yellowish white, tinged with blue and with dark stripes.

Among the cushion miniatures is *Eritrichium elongatum*, of which a good many plants, but few flowers, were seen. If anyone to whom plants were mailed manages to keep this, I hope the fact will be reported, for they went out with rather good roots. Closely resembling this in appearance was *Draba nivalis*, already in green fruit. A few plants of *Papaver radicum* or *pygmaeum* were found; these should be tried from seed. "The Flora of Yellowstone Park," by W. B. McDougall and Herma A. Bagley (Yellowstone Library and Museum Association, Yellowstone Park, Wyoming; 1956 edition with color photographs titled only with common names, costs about \$2.50) mentions no poppies, of which the State College herbarium had only a single sheet of specimens, indefinitely labelled. Both Rydberg and Coulter-Nelson give the color of the flowers as yellow, but the ones I saw were cream.

Although knowing better, I could not resist trying to bring home, and to send out, some of the pedicularis found: the clow-growing pale chrome-yellow *P. parryi* (called *P. oederi* on a State College specimen) of the highest altitudes,

sometimes described as dirty yellow, but to me a desirable soft tone; and *P. groenlandica*, rich red-purple, of swampy places somewhat lower down, a species which reportedly ranges all across the continent. Has anyone ever grown pedicularis?

Trifolium nanum, *T. haydeni* and *T. brandegei* are the clovers found in the Yellowstone region; what is probably *T. haydeni* is widespread in that alpine sod over a considerable altitudinal range, and has nice little purple heads. I have kept it in the garden for a number of years, but it has not bloomed well for me.

The mat-forming willow at the top of the ridge seems to be *Salix cascadenis*, which the Yellowstone Flora describes as having leaves half an inch long, green and shining, as compared with *S. dodgeana* with leaves one-fifth of an inch long, and *S. nivalis* var. *saximontana* with leaves three-quarters of an inch long. The herbarium specimen of the last at Bozeman is not the Beartooth one I encountered, but more probably the one that I saw in Glacier Park on the way home. The herbarium had no specimens of the two other species, or at least they could not be located while I was there. Whatever its name, this willow has survived easily in my garden, has spread some, and has bloomed. Another species collected grew in bogs lower down, and was a foot or more in height; its identity is unknown to me.

Among the happiest survivors in my garden, of plants collected in other years on Beartooth, are the two potentillas, three small daisies, and an unknown ranunculus from subalpine locations. One surviving crucifer that always shows up seems to be an annual that sows itself, and is not impressive.

Unfortunately, the numbered labels accompanying my daisy specimens were displaced while Prof. Booth was trying to help me with identifications. They included *Erigeron uniflorus*, *E. rydbergii*, and a townsendia which he did not have time to run down. I did not get a determination of another erigeron (?) with silvery chrysanthemum-like leaves on a creeping plant, and sizeable white daisies on stems of a couple of inches; it has grown in my garden for several years without giving much bloom. *Townsendia grandiflora* (biennial) was found in fruit on lower Beartooth Butte, at a relatively low altitude; it is easy in the garden. There were many other subalpine daisies of all heights.

A thousand feet or so below the pass grew many other delightful plant personalities, including dodecatheon and claytonia, especially attractive because of the large blooms on small plants, but these virtues may be somewhat modified when the plants are grown at lower elevations. The claytonia is probably *C. multicaulis*. The white marsh marigold, *Caltha rotundifolia* (or *C. leptosepala*?) grew in wet places from around six thousand to nine thousand feet. This should not be difficult in a wet place. Around five to seven thousand feet were encountered, among countless others: *Eriophyllum integrifolium*, which is precious to me, though it might be a weed to some—golden daisies again, perhaps short-lived, but it might be induced to seed itself; several arnicas making great splashes of color; *Arenaria sajanensis* (according to Booth); lupins; astraguli or their relatives; *Zygadenus elegans* and *Z. gramineus*; *Erigeron salsuginosus*, tall and showy; *Aquilegia flavescens*, with pale yellow short-spurred flowers; several water-loving saxifrages with small flowers at the top of tall stems; *Eriogonum subalpinum*, very frequent and conspicuous with its soft creamy umbels; *Pentstemon procerus*, the only one encountered here; antenarrias; *Aster alpigenus*.

As to the last-named Dr. Worth remarks that those he has observed at high altitudes laid their long narrow little leaves almost on the ground in a small tuft, while those I sent him had upright leaves. I noted both types growing near together, and the flowers, by hasty observation, seemed the same, so that I came

to the conclusion that the leaf habit must be connected with the location or period of development; the rosetted ones were on flat rock with little soil. (This is a tentative conclusion, for I have no description of this species at hand). Because of its deep-colored blue-purple flowers and neat habit, this one-to four-inch plant is a treasure, but is difficult to establish.

Phyllodoce and kalmia were encountered on last summer's trip in only one locality, but are reported as plentiful somewhere on the mountain. One or two dwarf vacciniums are common. *Geum rossii* (*G. turbinata*) I probably mistook for the familiar *Sieversia ciliata*, and I may have mistaken *Anemone tetonensis* for our familiar *A. globosa*, of which it is a miniature, with blood-red flowers, or rarely of blue-tinged white. Flowers of *A. globosa* here at 2500 ft. vary from cream to wine-red, and have the form of very tiny tulips, not showy but nice.

The most gorgeous displays of blue were made by the annual *Gentiana elegans*, official flower of Yellowstone Park. They grow from four to eight inches tall, at subalpine elevations, in moist spots. Often the flowers appear singly among other plants, but on a steep rocky slope on Beartooth Butte, where water seeps underneath, I saw great clumps of them, as unforgettable as any sight on the trip. I brought home a chunk of sod with tiny plants beneath the flowering gentians, hoping that they were seedlings of this beauty, but they turned out to be a very tiny epilobium!

There is no space here to write of the many subalpines that do not belong in any average rock garden, though they usually grow among rocks, such as *Mertensia ciliata* and *Mimulus lewisii*, one or two feet tall in moist places, the latter the less common of the two; *Delphineum cucullatum* to six feet tall and past blooming, so that I could not judge its value; *Geranium richardsonii*, white-flowered and rather straggly, but attractive among other things in semi-shade; *Valeriana sitchensis*, etc.

Enroute home, we stopped for only half an hour at Logan Pass in Glacier Park. I hastily listed over forty plants observed, most of them in bloom. Among those that had not been seen in the Yellowstone region were: *Penstemon lyallii* and *P. ellipticus*, *Anemone douglasii*, *Gentiana calycosa*, *Hypericum formosum*, *Salix nivalis* (I presume), a senecio resembling *S. fremonti*, a yellow castilleja, an aster similar to *A. scopulorum*, *Dryas octopetala*, and possibly others. The elevation at Logan Pass is only 7,000 ft., but the alpine zone runs lower in this corner of the state.

At to which species are alpine and which are not, there are some species, such as the shrubby cinquefoil, *Potentilla (Dasiphora) fruticosa*, and bulbous *Zygadenus elegans*, which I have seen growing from two thousand to eight thousand feet, varying in size and form with the altitude. *Aquilegia flavescens* has nearly as wide an altitudinal range. As to lime-lovers and acid-lovers, it seems to me that the plants are not as much worried as we are about this question. It is my understanding that Beartooth Butte is limestone, and the soil of its lower reaches is a sort of thick granular clay presumably of limestone origin, yet many of the same species flourish there and in the peaty-appearing black soil among the rocks of supposedly granitic locations higher up. The ericaceous plants are the principal group that does not appear on the limestone, whereas all the species on the Butte can be found elsewhere on non-calcareous soil. What is the explanation?

* * * *

GARDEN NOTES FROM MONTEREY BAY

RAY WILLIAMS, *Watsonville, Cal.*

THIS YEAR has brought its usual quota of new plants and the realization that something drastic must be done if there is to be anything but chaos in the rock littered area I call my rock garden. Perhaps it was a mistake for me to become interested in primulas again when I have so little suitable space to grow them. But when I was given a few tiny seedlings of *Primula viali* by Mr. Arthur Menzies, an enthusiastic rock gardening friend of San Francisco, they not only surprised me by living through a very wet winter, but bloomed this year with great husky spikes that were the delight of all who saw them. So far they have shown no sign of biennial tendencies and the disappearing foliage has left fat healthy crowns that promise another year of bloom. Those for lack of suitable shade are growing in an east facing lean-to which provides a dappled shade and some semblance of humidity. *Primula viali* is not the only thing that graces the overcrowded lean-to; *Primula jesoana* from Japan thrived exceedingly and kept a perfect balance between lush green foliage and crimson bloom. Tiny *Primula geraniifolia* with its quaint and pretty heads of reddish pink seems happy indeed, while *Primula florindae* was truly magnificent almost reaching its allotted four feet and totally lacking the tired wan look it so often shows in gardens. I am convinced, for the present at least, that a great many oriental primulas are willing to substitute the rich black muck, or what ever they grow in their homeland, for a well watered, well drained bed of good soil enriched by almost one third its bulk of well rotted barnyard manure. The aging of this should be quite complete, I think, seven years in this instance. This year I have two more beds occupying the remainder of the space and filled with seedlings of *PP. capitata*, *nutans*, *polyneura*, *chionantha* and a few others, now so crowded they obviously can never reach maturity in those cramped quarters.

Other plants awaiting more space in moist shade include roscoeas, tricyrtis, tiarella and a few hostas, also a vigorous pan of *Nomocharis mairei* for which I have great hopes and some misgivings too. They show no signs of dissatisfaction yet but it is a long road to blooming size and many things can happen. Our long growing season and winters of uncertain dormancy are resented by some plants while others, even some arctic ones, take it all in stride and thrive exceedingly well. I have grown only one species of tricyrtis, *T. hirta*, and find it a delightful plant which should be grown in rich soil in cool moist shade. I find it almost unknown in gardens here. Perhaps like *Primula florindae*, it should be well grown or not grown at all. The pure white form bloomed this year and I find it just as delightful as the type.

My rock garden, already filled to overflowing and becoming so weedy as to need a redoing, besides being sun drenched, is no solution to the problem of what to do with those plants which shun a California sun, no matter what their inclination in their native land. So it is evident that new beds will have to be constructed and the lifegiving dappled shade provided and humidity maintained if they are to be grown on. There seems no end of things to do for those who grow plants but who would have it different.

The genus *Codonopsis* has given me some surprises this year, a few disappointments and some genuine pleasure. The descriptions by Dr. Sampson Clay are sure to give enthusiasm to anyone who reads them, so accordingly, I ordered seed of every species I could find. The disappointments were that several species turned out to be so near to *C. clematidea* that I could tell no difference. *C. vin-*

ciflora was the big surprise: an eighteen inch climber, it has rough, lobed leaves and big downfacing bells of the most unusual color, not at all the blue one would associate with vinca or the description given it, but a strange blending of yellow, brown and green that would be difficult to describe. I doubt if anyone would call it beautiful but for those who love the bizarre it should be fascinating. It is doubtless not the true plant.

Codonopsis meleagris gave me the most pleasure though only one plant has bloomed and that with but a single flower. Its little incurved leaves of deep sombre green and its frail habit warn that it would be folly to plant it in a parched place in sun, so I have it in the coolest corner I could find with ample moisture. Those who like *Fritillaria meleagris* will like this also for their flowers are very much alike. *Sisyrinchium filifolium* from the Falklands seems very happy in its company and appears to be going to lead a normal life. Most of the sisyrinchiums that I have tried are quite willing to grow almost any place. Indeed, one which I know as *S. bogotaense* insisted on growing every place and threatened for a time to be a serious weed. It is an attractive little plant too and I still have it around but like some alliums, oxalis and other aggressors, it is wise to keep it in check.

I have never had the opportunity to grow *Sisyrinchium douglasi* though some day I hope to. My first experience with it was to come across it growing by the thousands in the short grass of the dry slopes that border the Columbia River in Washington. It was early March and bitterly cold with the usual biting wind blowing through the gorge. I stopped to see what flower it could be that was dotting the thin grass with such vivid blue. It was the sisyrinchium and after I could accustom my eyes to the cold wind I could see that they were everywhere. I could not help but marvel at the hardiness of so delicate a flower for I saw not one damaged petal though every gust of icy wind beat them about unmercifully. Knowing the folly of trying to collect a plant at that time, I picked a couple and put them between the pages of my note book for later examination. Imagine my surprise when I opened the book two days later to find, instead of a pressed flower, only the stem and a blue-purple stain, like a blob of blue ink. The flower had disappeared, so delicate was the petalage.

The comments of Mr. Ginns of Desborough, England, published in the Jan. 1956 issue of the *Bulletin* and his later article in the *A. G. S. Bulletin* of September of the same year are of the greatest interest and I am pleased to learn that a few cacti are receiving a trial in an English rock garden. California gardeners have always had a keen interest in cacti and succulents, especially the succulents of South Africa with all the strange and varied forms that make them the most fascinating group of plants in the world. It is in the southern part of this state, from Santa Barbara southward, where those plants become the standard rock garden subjects and they are used extensively.

Monterey Bay is at the southern extremity of the redwood belt and far removed from the citrus growing area. The section where I garden is noted for its Newtown Pippin apples instead, and the damp and frosty winters which we experience allow us to grow in the open ground only a portion of the treasures that grace the more southern gardens. A wide variety of cacti may be grown in the open ground here but they have never been very popular, largely I think due to the difficulty of keeping the weeds and grass from growing around and over the plants. Porcupines do not throw their quills, neither do cacti throw their spines but they have a way.

Early this spring I drove to Salinas, only thirty miles away, to renew my acquaintance with Mr. Robert Flores, a man who has spent most of his life collecting and growing cacti and succulents. I remembered that his collection

of those plants was quite extensive some twenty years ago when he lived near by, and now it is magnificent, but the highly specialized succulents are all safely under glass in an unheated greenhouse. I inquired about hardiness and their use in the rock garden. He said, "Oh yes, a lot of them can be grown outside with some success but most will be lost sooner or later from some combination of weather," explaining that while some of those plants normally experience as much cold as we get, in their native habitat they are seldom water soaked at the time, and this is the chief cause of trouble in the garden. His outdoor plantings are largely cacti, aloes and agaves with the hardier, small growing succulents tucked away in the shelter of the rocks.

In late October I spent an afternoon at the University of California Botanic garden in the company of Mr. Paul Hutchinson who has helped to build one of the world's finest collection of cacti and succulents there. Here too most of the South Africans are grown in the greenhouse but experiments are continually under way to test those plants for hardiness and adaptability to garden conditions. The area devoted to the South Africans slopes steeply and in places almost perpendicular and faces the south and west with full exposure to sun and wind. Crassulas were there in variety but the highly specialized ones from the more arid regions have to be kept indoors. They rot too easily in cold and muggy weather, while some are tender to frost. I was surprised at the number of *Andromischus* species which are growing happily in the open. Some of them, Paul told me, had been there over four years.

The stapelias and their relatives are the despair of the succulent grower who gardens in the open and I know of no place in California where any number of them can be grown in the garden. Yet in the botanic garden, *Stapelia lunata* has passed one wet winter and eight degrees of frost safely. In appearance it is very like *S. variegata* but reduced to half its size.

The Mesembryanthema have long been used in our gardens with only spasmodic popularity. Their very brilliance is, I suspect, their undoing and many people tire of them quickly. They are largely confined to beach gardens, where they seem to belong. Only very occasionally are they used as a border plant in this section of the state. *Drosanthemum floribundum* and sometimes other species are occasionally used to cover sandy banks where for months they become shimmering sheets of pink or purple. This plant is used effectively as a ground cover on the rocky headland at Pacific Grove where it is an excellent foil for the magnificent specimens of *Aloe arborescens* growing in the public garden and playground overlooking the sea. I am still of the opinion however that those succulents of South Africa and other desert regions are best used very sparingly in the garden of conventional rock plants lest the picture we paint with plant and stone be that of the deserts of South Africa superimposed on the vale of Kashmir.

I have greatly enjoyed the articles written for the Bulletin by Dr. Carleton Worth, dealing with the flora of Chile, and his experiences while plant hunting there. My experience with Andean plants suitable for the rock garden is small indeed. *Oxalis gigantea* is growing at the Berkeley Botanic Garden and just as Dr. Worth describes it. The plants I saw are the height of a man and growing in the greenhouse devoted to cacti and succulents. I failed to inquire if they had been tried outside and tested for hardiness.

Oxalis herrerae from quite high in the Peruvian Andes is more of a size for rock garden use as it seldom grows more than six inches high. Its tiny three lobed leaves set singly on the top of thick succulent stems, swollen in the middle to resemble a miniature vase, those set thickly along woody, often twisting branches. Yellow flowers with brown or red striations are borne along slender

arching stems and in plentiful numbers. Being mostly downfacing and not very brilliant, they are not particularly showy. They do very well in my garden though a trifle tender, losing their leaves and sometimes their lives after a hard frost. I always take some inside for the winter, just in case.

A year and a half ago I was given two species of oxalis by Prof. Walter Blasdale of Berkeley. One is *O. incarnata*, a pleasant but not too exciting South African, and the other *O. lobata* from Chile. This has turned out to be one of the most beautiful plants I know. Its emerald carpet of clover is a half inch or less high and studded throughout fall and well into winter with upfacing flowers of clearest and brightest yellow, those sitting tight on the little mats of foliage. Reported by Clay as not always hardy, it has stood ten degrees of frost this season without damage and I noticed there was still a flower or two open on this chilly but sunny January day. If it follows last year's pattern, it will soon start its dormant period and spend the next six months or so underground. It is difficult to interest California gardeners in oxalis, so invasive are some of them. I always grow them in pots or boxes until I learn what their behavior in the garden is likely to be. *O. lobata*, I feel quite sure, is safe to release in the very best company.

I have a few of the alstromerias common to California gardens, Andean plants but scarcely rock garden subjects and in addition the seldom seen *Alstroemeria hookeriana*, or *hookeri* as it is variously called. A dwarf species growing four to six inches high, it is exceedingly free flowering when grown in a sunny well drained spot. I first got it from the late Mr. E. O. Orpet of Santa Barbara, so long ago I have forgotten the date, but I am certain it must have been fifteen years or longer. It has been with me ever since and the bed where it is growing must be nearly a solid mat of tubers. The flowers are an odd shade, hard to describe, a sort of tawny pink with a touch of yellow in the throat. Seed of *Alstroemeria nemerosa* was sent from England by the late Major Albert Pam to a friend who turned them over to me for growing. The resulting plants were divided in due course. This summer my friend informed me that the one plant which I now have is the only survivor. It somewhat resembles *A. pulchella* (*psittacina*) only more robust and with bolder and wider leaves and much larger and more open flowers. Those are a flaming red-orange with bright green tips to the upper petals and a few dark markings deep in the throat. Except that it is South American we have no provenance for it. Although too large and tropical in appearance to fit the rock garden I am proud to have it.

Pasithea caerulea is another Chilean which I have grown for years. It too came from the Orpet Nursery at about the same time as the *Alstroemeria hookeri*. The original plant has grown to a clump more than four feet across and each spring sends up two to three foot flowering stems by the dozens. The flowers are little over a half inch in diameter but are wide open and so freely produced and such vivid blue that a well grown plant is truly a thing of beauty. It is too large for all but the very largest rock garden and has never become popular in the landscaping of homes, largely I think because it goes dormant in early summer and in the process its ample grassy foliage leaves an untidy sheaf of drying hay.

Mutisia retusa I have not yet flowered and all attempts to grow it in full sun have ended in failure. In light shade the plants seem to be doing very well. I have never been able to get seed of any of the species more suitable for the rock garden that Dr. Clay so enticingly describes.

The calceolarias are not too permanent in many gardens and mine is no exception. *C. darwinii* had a short two years sojourn and left no descendants, *C. biflora* fared considerably better but it too finally departed. *C. tenella* at

present seems very happy indeed and has given no cause for anxiety during the several years I have had it. But from the experience I have had with calceolarias in my garden I would hesitate to predict its future. It is no doubt the smallest of the species and grows as the flattest of green carpets, sending up throughout the summer, a scattering of slender three inch stems carrying two or three little yellow Lady Slippers, lightly brown speckled within.

Solonomeilus is a Chilean and Patagonian genus, very close to the *sisyrinchiums*. I have two of them, both without specific names known to me. One spreads mildly and also reseeds while the other, although perfectly reliable, presents a problem in propagation as it never sets a seed and year after year the little clump grows no larger. As might be expected this one is the more attractive of the two. Both are yellow flowered and excellent rock plants.

Margyricarpus setosus is a sprawling evergreen shrub with finely cut foliage and an ample crop of pink tinged, pearly berries that are in evidence almost the entire year here. It seems indifferent to soil or aspect, growing equally well in sun or shade and standing drought remarkably well.

Acaena myriophylla with billows of deep green ferny foliage and alas, quantities of sticktight burrs also, is another Chilean that gives promise of like performance for it like the *margyricarpus* has a seemingly endless root that goes down and down. Both those plants, I think, are better ground covers than rock plants and should, once they are better known, become popular for this purpose, especially for covering steep banks under trees.

My own little collection, by no means, completes the list of Andean plants for the rock garden that are already more or less in cultivation in California. And from the reports of those who have traveled and collected there, the Andes is a storehouse of treasures to be looked forward to.

Note—A true reproduction of *Alstroemeria hookeri* may be found in, "Flowers: A Garden Note Book," by the Hon. Sir Herbert Maxwell.

REPORT OF THE NORTHWEST UNIT

HELEN MORRIS, *Bellevue, Wash.*

THE NORTHWEST UNIT met on November 14 at the Arboretum Clubhouse. Mr. E. H. Lohbrunner of Victoria, B. C., our guest speaker, presented an interesting talk illustrated by slides, many of which showed new and unusual plants.

The guest speaker for our January meeting was Mr. James Caperci of the Alpine Nursery, who specializes in growing dwarf rhododendrons. He showed slides of choice and lovely plants in his collection.

On February 13 we had our annual "Men's Night," which is really ladies' night since the women are excused from kitchen duty and the men serve refreshments. Our subject was "Riot in the Rockery," dealing with annuals, and was capably handled by Mrs. L. N. Roberson.

The meeting on March 14 was a round table discussion on penstemons, with the following members participating: Mrs. Joseph Witt, Mrs. A. P. Renton, Mrs. H. H. Miller, and Mrs. F. Padavich.

In April we had our annual plant sale, which is always the occasion for thrills and hilarity. The sale chairman, Mr. Joseph Witt, and auctioneer, Mr. Burton Wheelon, carried it off with great success. The most hotly contested bidding was for two beautiful flats of rare alpinines, grown by Mr. George Schenk. Representative of the contents were *Raoulia lutescens*, *R. australis* and *R. tenuicaulis*, and *Antennaria dioica* 'Nyewood's variety.'



Oleg Polunin

Saussurea sp., one of a race of wool-wrapped composites which range from Kashmir to northwestern Tibet.

plants" which look like tufts of cotton wool growing upon the rocks. They are species of *Saussurea*, and in this particular case only the tips of the leaves projected through the white cottony hairs in the centre of the plant. The plant when mature was quite spherical and the dull purple flowers hardly projected beyond the white clothing of hairs. A species of *Cremanthodium* with lance-shaped leaves grew in wet places under shady rocks. It had the characteristic drooping flowers of the genus, nearly two inches long. There were two or three species of monkshood forming masses of blue in damper patches, such species as *Aconitum violaceum*, *A. heterophyllum*, and dwarf varieties of *A. napellus*.

From this high pass one could look back on the massive rock pyramid of Kolohoi, partly covered in snow, and the great crevassed glaciers which sweep down its vertical cliffs, while to the north one looked into the jungle of snowy mountains on the borders of Ladakh.

I journeyed next over a pass, the Yam Hoar (13,448 ft.), on my way down into the other great valley, through which the Sind river flows. On this pass, high above the Sind valley, I found the plant that I was particularly anxious to obtain seed of. *Paraquilegia grandiflora* is a very fine alpine plant but difficult to grow in the alpine house. Here it grew on the vertical cliffs in a northern aspect, its delicate grey fern-like leaves pushed out in tufts from rock crevices. The flowers are borne singly on the end of very short stalks beyond the leaves and are very pale blue with orange stamens. The petals are delicate and translucent, and open wide into a shallow cup which hangs down from the leaves. The flowers were over by this time, but the seed capsules were ripe and it gave me great pleasure to pour the seeds out of the dry heads into a seed packet. I had only to touch the capsules and bend them down slightly and the seeds rolled out with a satisfying rustle.

Another excellent centre for the collector is Sonamarg, where there is only



Oleg Polunin

Crevice-loving Meconopsis aculeata, with sky-blue poppies.

a small and rather primitive hotel, but it is in direct connection with Srinagar by bus. At the present time, movement is rather restricted by military regulations, but there is a beautiful valley, the 'Valley of Glaciers,' or Thajiwas, which is open to visitors and rich in plants. I did not have an opportunity to visit this valley, unfortunately, but instead went farther north to the drier country which lies to the north of the Sind Valley. I left behind the pine forests and climbed up through the silver firs and birch forests out onto the open alpine meadows, to the pass of Nichinai (13,387 ft.), and then dropped down a thousand feet



Oleg Polunin

The pink daisies of Allardia glabra.

to the lakes of Vishansar and Krishensar. They are set among wild mountain scenery, with jagged ridges of mountains towering above the lakes and steep open mountain slopes. Here some of the best trout fishing in Kashmir is to be had. From the lower lake a fast wild river rushes down through the mountains. It is full of excellent trout which take the fly freely and average over two pounds. It was September by the time I reached this wonderful spot and the alpine pastures were beginning to turn brown and many plants were now in the seed state. A few late flowering species were still in bloom however, particularly monkshoods and delphiniums, covering wide patches of the valley with blue. There was one species of monkshood which had pale Cambridge blue flowers in a compact spike, and it made a fine show, while *Aconitum kashmiricum* was a very showy species with deep blue inflated flowers, veined with purple. It seemed to prefer the damp and stony places along the streamsides. On sunny banks grew an annual gentian, *G. moorcroftiana*, standing six inches high, with twenty or thirty large flowers covering the plant. It made brilliant patches of colour and could be seen a long way off, mirroring the blue of the sky. Blue flowers predominated on the Kashmir mountains in autumn.

On the high pass of Tsur Bar (13,749 ft.), I found again many of the high altitude scree plants. For example, growing out of the loose scree, on long cord-like stems was a very unusual corydalis, *C. crassifolia*, with glaucous succulent leaves and dusky purple flowers, and fruits inflated like bladders. On the rocks at the top of this pass there were saxifrages growing from the crevices and cracks, such as *Saxifraga imbricata* and *S. humilis* which has not before been recorded in Kashmir—a delicate plant with androsace-like growth, a compact rosette of leaves and white flowers. Here too were *Paraquilegia* in full fruit and *Androsace muscoidea* and *A. mucronifolia* with the tiny seed heads opening out to reveal the brown seeds within.



Oleg Polunin

Bright blue Gentiana
cachemirica, clinging to a cliff.

I continued westwards to the sacred lake of Gangabal lying under the high mountain of Haramukh (16,872 ft.). To reach this lake I had to cross the high pass of Menganbob, and in the screes below it I found the ripe capsules of the second species of *Meconopsis* which grows in Kashmir and which is endemic to the country—*Meconopsis latifolia*. It is a species with beautiful pure blue flowers, more robust and fuller in flower than *M. aculeata*. It can be distinguished in the field by its entire but broadly crenate leaves. High up on the cliffs above Menganbob grew the quite prostrate shrub *Cotoneaster macrophylla*, which had pressed itself closely to the rock ledges and bore beautiful carmine glaucous fruits; on other rocks I found the delicate grey-green grassy leaves of *Eritrichium strictum*, and with it a plant that I had seen quite frequently before—a plant that always pleased me, *Codonopsis ovata*. Its delicate milky blue bells hang individually from the ends of long stems above strangely aromatic leaves.

From the high lakes of Gangabal, which abound in sacred trout, where mountain choughs and Himalayan whistling-thrushes lived in the alpine pastures, I dropped down through dusty pine forests into a deep valley, the Wangat Nullan, and pitched my camp once again among maize fields where tall balsams and scabious were flowering along the rough field walls, and where berberis and roses were in full fruit.

I returned again to Srinagar and spent the last few days revisiting some

of the earlier collecting grounds on Apharwat for seeds. By mid-September I had completed my six weeks' journey in Kashmir. The ponies had done their work well, despite some difficult places, when for instance one of the loaded horses slid down, in slippery mud, several hundred feet through the forest till it was brought to a standstill by a tree. The pony men had worked with a will, at times holding on to the ponies' tails to prevent them slipping on difficult downward tracks. Abdul had managed to prepare a varied diet and kept me in excellent health, and Ramzana and I had seen a wonderful number of Kashmiri plants and had collected over 700 different gatherings of herbarium specimens and 130 different kinds of seeds.

THE 1957 CROP

DORETTA KLABER, *Quakertown, Pa.*

I THOUGHT *Dicranostigma lactucoides* outstanding among the plants which bloomed here for the first time in 1957. It developed into a decorative flat rosette of lyrate leaves, silver with overtones of pink and blue, firm as leather. The flowers, soft yellow poppies sparsely produced, were something of an anticlimax.

Ranunculus crenatus made a very small mat of glossy scalloped leaves, on which appeared little white buttercups. Perhaps a second year they will be larger—those that were not demolished by a beetle.

Campanula alpestris (allionii) was a disappointment: its large flowers, like Canterbury bells, seemed out of proportion as they looked boldly up from a small clump of narrow waxy leaves. *C. planiflora*, on the other hand, was charming all the way. The plants made interesting small dark green "castiron" rosettes, hard to the touch. Only one flowered this year. It sent up a spike less than six inches high from the center of the clump, like a baby peach-leaved campanula, with white cup-shaped flowers welded up the stem. *C. lasiocarpa* (if true) is a sweet little thing that doesn't look as if it were long for this world. For one reason, it bloomed the first year from seed, and for another, it bloomed non-stop all summer. It has soft grey scalloped little leaves on wiry six inch stems and sprays of small lavender bells. A past number of the *Bulletin* showed *C. lasiocarpa* as having larger flowers.

Erigeron aureus makes a tiny clump of leaves, widest at the tip. It has the cutest little yellow daisies imaginable, each an inch or two across. Another, but larger, daisy is *Actinea herbacea*. A clump of narrow pointed leaves emits six inch stems with firm flat flowers, each petal notched at the edge.

Last year I was fortunate in being able to procure seeds of three forms of *Gentiana scabra buergeri* from Japan. They bloomed gorgeously this fall in wonderful shades of blue: 'Kirishima rindo' (or *saxatilis*), 'Tukasa' and 'Kumagawa' rindo (rindo meaning gentian). 'Kirishima' has stems flat on the ground. From the end of each stem and from every leaf joint flower stems rise for several inches, tipped with a single upfacing flower of exquisite form and color. 'Tukasa' rindo has several flowers at the end of each stem and at every node, so that it is particularly showy. Both these forms are four to six inches high, begin to bloom in September and keep on into October. 'Kumagawa' is larger, a mass of large leaves and big trumpets, to ten inches high. It starts to bloom in October and keeps on until heavy frost. Because of their late bloom, it is difficult to collect ripe seeds, but I have found that by picking the flowers at the approach of wintry weather and keeping them in water, they will mature seeds indoors. The devil in this gentian heaven is a gentian worm whose idea of a choice

tid-bit is a developing bud. A weekly dusting with a general poison has kept the pest pretty well under control. Arsenate of lead would probably serve the same purpose.

Several of the dwarf dodecatheons bloomed this year, all charming, all about six inches high. They differ only slightly in form and color—a deep rich pink: *DD. amethystinum, tetrandum, pauciflorum*.

Dianthus scardicus was another of the tribe's nice low grey mats of short firm leaves covered by pleasing pinks. *D. noeanus* was a surprise: Its tennis balls of firm hard grassy grey leaves looked most promising, then squinny little white, deeply cut flowers emerged on four inch branching stems. I started to pick them off, for they rather spoiled the appearance of the nice buns of leaves. Automatically, I put them to my nose. What a fragrance! No more were picked off! It is possible that this was not true to name. It fits all descriptions except that of the spines at the ends of the leaves, which were stiff and sharp, but not spiny.

I could go on and on, for I always try as many "new" seeds as possible. I might just add that the crassula from Basutoland lived over the winter. It bloomed with the tiniest of white flowers on red stems, and is now going on making very flat mats, sedum-like and pleasing.

PULSATILLAS

BETTY JANE HAYWARD, *Scarborough, Maine.*

THE PLANT WE HAVE LONG KNOWN as *Anemone pulsatilla* must henceforth be known as *Pulsatilla vulgaris*, while other species of *Anemone* in close kinship have likewise been moved to the genus *Pulsatilla*.

The old familiar *pulsatilla* with deep lavender or purple blossoms has always had a place in my garden. In sunny situations the early warmth of spring encourages the fine flowers to open. They are always welcome and admired. In the right situation plants will live in health for many years. All are lovers of lime in some form, and do best in firm soil in warm exposures.

Recently, *P. vulgaris* has produced some very fine hybrids: many have large flowers in rich shades of deep wine and glistening red. The latter are a great improvement over the old *P. rubra* with its small flowers of dull red. The lovely variety 'Budapesth' has large pale blue flowers, furnished freely and very early.

P. slavica is another variety quite new to the garden here, where a small colony is established in a warm spot. The blossoms are said to be large and deep violet in color. There are fine pink kinds in cultivation, one of which may perhaps show up among the seedling plants. It is a pleasure and a challenge to grow them from seed.

Comparatively new to cultivation is *P. caucasica*, and doubt has been expressed as to its belonging to this division. The plant is delicate and refined, the leaves are fernlike, the blossoms pale yellow and smaller than most.

P. vernalis is one of the finest of all, as well as one of the choicest of alpine plants. The beautiful flowers tinged purple outside and pearly white within spring up just above the low ferny leaves. *P. vernalis* is not too easy to grow and keep. A few are growing on a slope toward the east, seemingly happier there than in a sunny spot where conditions were less favorable.

How wonderful it would be to tell of success with *P. alpina*, a lovely plant of the high mountain meadows. Often it has been anticipated but never realized. There are now seedlings in reserve of it and of its variety *P. asulfurea*. Perhaps the right place will be found for these beautiful plants we want so much to grow, and success will come at last.

FERNS FOR THE SUNNY ROCK GARDEN

DR. HELEN C. SCORGIE, *Harvard, Mass.*

DO WHAT WE MAY, there is a concentration of bloom in the rock garden during the late spring months, with a predominance of brilliant color. From an esthetic viewpoint, the bright display presents problems that are by no means easy to solve. A "riot of color," however much the tourist trade may "oh" and "ah" over it, is more often than not as big a headache as any other riot, and extremely inartistic to boot.

Colors, lovely in themselves, may clash, destroying the beauty of each, or a strong color kill the fineness of a delicate one. Flower shapes, in all their variation and their satisfying lines, are lost in the mess of color. Above all, at this time of year, the rock garden needs restraint and a bit of restfulness.

We think of ferns in connection with cool, shadowy woods, dried leaves under foot, thrushes and sky-reflecting water. But there are a few ferns that can bring a sense of repose into the hot, teeming June rock garden.

Many of the spring rock plants bloom so profusely that the leaves are almost hidden. Most are low cushions or trailers. The patterned greenery of the ferns enhances the beauty of these, and the variance in height relieves the monotony of flatness.

Ferns are useful, too, in dispelling the inartistic tidiness of a neat little plant or two sitting lonesome and polite in a pocket of earth carefully scrubbed clean of any suggestion of tiny alien weed and surrounded by equally bare and neat stones which obviously did not grow there. A low fern, springing up between two of the rocks, will help to dispel the artificiality of the spot. Bare stones, incidentally, are not a necessity. Placed stones and outcrops alike may be mantled with multicolored lichens. These lowly plants have a fascination and beauty of their own that rock gardeners would do well to study.

But the role of the ferns is by no means a negative one. In early spring, the developing new growth is one of the most gladdening things in the plant world. This is true of the evergreen ones, as well as of those that have been dormant in the cold weather. The quiet unfolding of the new frond brings a feeling of rhythmic motion to the watcher, suggesting the development of a musical theme.

Later, in the hot, dry days of summer, the differing designs of the fronds charm the eye. The fresh greenery never droops under the high sun. There are four ferns that are content with this difficult position here. I have hopes of finding others in time. Of the four, three are native and one comes from the west coast.

The hay-scented fern, *Dennstaedtia punctiloba*, loves the sunny bases of old stone walls that crisscross New England farms. Its soft rather fragile fronds make close mats over wide areas in these locations. But, in the rock garden, it may readily be kept in check by the poorest and driest soil at the top of the slope. In such a location, it remains lower than in the wild though still of a luxurious closeness. It may be further restrained by judiciously placed boulders. Its lacy outlines soften the hard corners of the granite, and contrast prettily with the dainty outlines of the blue-gray lichen that adorn these stones like oddly placed "tidies" of Victorian days. The delicate scent is noted only when the fern is picked, but, in this scented garden, makes a pleasant addition to the tangy pungence of the mints and varied spiciness of flowers.

Contrasting with the hay-scented fern is the well-known polypody that falls in sheets over granite and other outcrops, *Polypodium virginicum*. This east coast fern resembles very closely the common polypody of Europe and the Rocky

Mountains and westward. The most conspicuous difference is noted by the gardener not by the eye but by the tongue. The sweet taste of the *P. vulgare* rootstock when bitten is entirely absent. One notes only a rooty taste.

In the wild, the fern starts in a crevice where it can get a deep, firm foothold, moisture and food. From this it moves along the crevice, forming new plants as it goes, and spreading outward, over the face of the rock, sending rootlets inward wherever it finds the minutest crack. Gradually, a thin layer of leaf mold and dust covers the face of the outcrop, held in place by the entanglement of fine roots, and the green drapery beautifies a broad surface.

These rock coverings, even when of smaller extent, cannot easily be transferred to the rock garden, especially if they are placed in full sun. Nature is often wild and rough and not, as the sentimentalist would have us think, always beautiful. When drought is on the land, all ferns, and especially those with little or no access to soil depth, shrivel and become dormant.

Small rock gardens must avoid such unsightliness. In times of heat and dryness, the roots of the polypody in the rock garden must reach down into the soil to obtain the moisture needed to retain its fresh appearance.

With even modest sized sheets of polypody, tearing the plant from its rocky home injures the large roots and destroys the finer ones. If this is transferred to the rock garden, it will inevitably die. A small section from the edge of a colony at the base of a boulder, or better still, a young plant growing independently in soil, makes a desirable start for the garden. Special care should be taken that as little injury to the roots as possible occurs and that they do not dry out. One must remember that even huskier plants, moved from one part of the garden to the other, are almost certain to be injured.

In its new home, the fern may be established between two rocks with fairly flat surfaces, more or less flush with the ground. The hole should be of sufficient size to allow one to work easily, moving the second stone sideways against the first after the roots have been spread out and both they and the side of the first rock covered with a thick paste of leaf mold and finely broken granite chips. When the second stone is brought firmly against the first, no air pockets will be left to cause future trouble.

As a further aid in establishing the fern, as my south-sloping rock garden is extremely hot and dry, I place a fair-sized stone directly in front of the plant on top of the two buried stones, as a temporary protection. Because of the frequent need for them, I keep on hand a few stones of attractive appearance to use in this way with small transplants. One or more are usually in use and otherwise are disposed in anatural and inconspicuous position along one of the paths.

The last of the natives is less robust in appearance than the two preceding. The dainty little ebony fern is one of the unfortunates in the plant world, for it has suffered botanically by having to change its appropriate name to an older, unsuitable one, *Asplenium platyneuron*. Like the hay-scented fern, it haunts the sunny sides of old stone walls, but it hugs them closer, seeming to need the cool dampness of the underlying soil for its roots. I find it also near granite outcrops in filtered shade, but never in the deep shade of wooded areas. The soil in which it grows is rather lean but of good depth and well drained. It may be found on a rock face occasionally, though there it is less luxuriant and somewhat less frequent.

The north side of a rock, in the garden, and a moderate amount of leaf mold in the soil will provide the less parched conditions which it likes.

The fruiting stalks are unlike the sterile ones, being taller and upright, while the sterile ones are procumbent. It is a variable species and is said at times

to produce in spring small plantlets from the axils of the fertile stalks. Unlike the other two, it is not mat-forming, and increases very slowly.

In the parsley fern of the west, the dimorphism is more marked, making it a highly ornamental little fern. This is *Cryptogramma crispa* var. *acrostichoides*. The decorative fruiting heads above the charmingly divided leaves may be enjoyed all through the summer.

As it grows in my garden, it is partially sheltered from the intense noontday sun and the ground above it is further shaded by *Eriogonum depressum*. The slope is steep, giving sharp drainage, as is evidenced by the contentment there of a small Irish daffodil purported to be very finicky in this respect.

Few flowering plants equal the ferns in the special purposes to which they are put. Plants of rock garden size with distinction in both flower and leaf are uncommon among those that will take a hot dry slope. They are treasures when found, but, on account of the color involvement, require far more consideration in placement.

Further search should produce other ferns equally amenable to this location. The three natives were moved into the garden from my own land, from conditions not far different from those in their garden locations. It is difficult to tell whether aliens which one has not seen on their native soil would endure these trying conditions.

THE SEED EXCHANGE

HAVING BEEN GIVEN no orders to "cease and desist," the Northwest Unit will continue to bear the responsibility of the Seed Exchange for the forthcoming fall harvest of 1958 and the distribution for 1959. Following last year's procedure, we will hold to a *November 15, 1958* deadline for the receipt of seeds from donors. No Supplementary Seed List will be published to accommodate late entries.

For those not acquainted with the mysteries of a seed exchange (we're still a bit overawed ourselves!), we can offer the following rules and customs as advice. Seed may come from your own garden, from gardens of friends, or may be surplus commercial seed. However, although seeds of alpine may be slow to germinate, many tests have shown that seed more than a year old rarely germinates well; so please do not add to the difficulties of the would-be grower by sending seed of other than the 1958 crop, unless its age is plainly marked on the packet.

Woody or herbaceous perennial species, native and exotic, that have rock garden suitabilities are preferred. As many of our native North American species are highly desirable for rockeries or wild gardens, and are greatly in demand, we are keen to have seed of any of them that you may collect in the wild or in gardens. All seed should be cleaned (threshed and winnowed) and as free of chaff as possible. Bulk shipments of clean seed are quite satisfactory, although it is a great help when donors have subdivided their offerings into the small packets ($2\frac{1}{4}'' \times 3\frac{1}{2}''$ coin envelopes) which are used in the final distribution. Should you subdivide your donations as just suggested, do not be too generous. We shall have over 200 orders to fill in 1959! Finally, seed packets (bulk or otherwise) should be clearly and *legibly* labelled with accepted botanical names or the appropriate horticultural ones.

Packages of seed for Exchange should be sent to the chairman, A. R. Kruckeberg, Department of Botany, University of Washington, Seattle 5, Washington. The 1959 Seed Exchange List will be compiled from all the entries received by the deadline of November 15, 1958, and will be mailed with the January number of the *Bulletin*. So, happy hunting and harvesting! A.R.K.

HAPPY ENDINGS

GRACE F. BABB, *Portland, Maine*

IN THE EXCITING game of gardening, often there are certain plants which seem to defy us to make them happy, for one reason or another. Sometimes we suspect the trouble, and may be able to solve it, or may have to give up; sometimes we may be baffled until a chance suggestion, or a lucky move, brings success. The following tales have happy endings for me!

Polemonium carneum. Over many years of growing plants from seed, with good over-all average success, there have always been a few kinds which would not live over their first winter of Maine weather. Keeping small seedling plants in a frame over that first dangerous winter often helps. And often a mature plant will be perfectly hardy. This happened with the West Coast *Polemonium carneum*. The descriptions of the flesh-pink flowers always appealed to me, and I tried it from seed several times. But never would the plants endure the first winter, and I gave up trying.

Then in early summer of 1955 I was astonished to find husky plants in the "coldest nursery" of James Mitchell in Barre, Vermont. (Perhaps Mr. Mitchell will tell us how he does it!) I brought a plant home with me, in hope that after being acclimated to Vermont, it might stand my climate too. Sure enough, it has been perfectly happy, and is up strongly again in this spring of '58. That first summer, and also in '56, I was disappointed in the flower color. Both summers were cold and wet, and although the plant bloomed freely, the color was a wishy-washy tint, neither yellow nor the expected pink. But 1957 was different: after a cool beginning, it turned hot and dry from early June on, and *Polemonium carneum* showed off to perfection! The lovely inch-wide saucers opened soft yellow with hints of pale pink, deepening to the looked-for salmon pink as they aged. They lived up to all my expectations! The plant has everything to make it desirable—a nice clump of light green ferny foliage, and many stems of flowers continuing practically all summer long, the whole some 12-15 inches high. Light shade is recommended, and this plant has only broken sunshine during hot weather, shaded by a tall maple that stands nearby, and an overhanging shrub.

White Bristled Aster. Another plant which I have had trouble in raising from seed is the white form of our little bristled aster, *A. linariifolius*. This is more surprising, since the common lavender form grows here along sandy roadsides and in open fields, and self-sows readily in the wild and in my garden. I have had reasonably good luck in germinating seed of the white one, but the tiny seedlings have grown very slowly, and have invariably died over winter, whether in a frame or in the garden. I should not say "invariably"—I did keep a few over winter once, in a frame, but after being put in the garden they stood still and eventually died out.

However this was another choice plant found at Mr. Mitchell's old nursery. (He has retired now, his business taken over by Donald Allen of Sky-Cleft Gardens.) The little plant had only two or three stems, but it bloomed the first fall here, and has increased, slowly but steadily, into a very nice clump. Last fall in its third year here it showed its charm with dozens of the little pure white daisies with wide gold centers.

To me it is fully as lovely as the lavender ones, since I am especially fond of white varieties of all plants. This aster seems to resent being moved while small, and must have some secret to its ability to keep seedlings alive to maturity. I shall be watching for white seedlings now!

Heuchera villosa. If you are familiar with the lovely coral-bells, as most gardeners are—and if they grow perfectly easily for you, and anywhere you put them—you will be surprised to know that it was only after many trials that I succeeded in making them happy here. For some unknown reason they disliked every location where I put them until at last I read about someone's plants growing under a cedar. My next trial was under a clump of arbor-vitae—and behold, that problem was solved! Now there are various colors and species almost encircling the "cedar," with all exposures of the compass, east and west, north and south. What special growing conditions are found there, I wouldn't guess!

One of the species is *Heuchera villosa*, another "find" in Vermont. It is native from Virginia to Georgia and Tennessee, according to Hortus II. Instead of the rounded scalloped leaves of most coral-bells, these are very large, four to five inches from tip to tip of the deeply cut points, looking like maple leaves. The strong clumps of rather light green foliage are attractive all season in their own right. The flowers are less showy than the pink and red ones of more common coral-bells, being cream to white, but borne in profusion on tall graceful stems of 15 inches or so, making a pretty—and cool—summer picture. The blooming season is late, beginning in August and continuing through September, and often until heavy-frost time in late October. This different heuchera always attracts interest from garden visitors and is well worth growing.

Chrysogonum virginianum. Sometimes a plant is highly recommended, but when tried once, or even twice, proves much less attractive or well-behaved than promised. The gardener is disappointed and is left wondering why others had been so impressed. Then perhaps the plant is tried "just once more"—and suddenly it turns on all its charms and justifies all the claims. This was my experience with golden star, *Chrysogonum virginianum*. It was one of the plants featured in the *Saxiflora* leaflets of several years ago, and at that time it interested me mildly as a native wildflower, growing from southern Pennsylvania southward. Plants were brought to me several times, and were tried in different locations without ever amounting to much. One was in full sun, I remember, and was moved to a shadier spot after learning that in nature it is a woodland plant. Three years ago another plant of golden star came in an assortment of gift plants and was hastily put in a vacant spot in the border for the time being. By chance it stayed there all summer, and behold! it thrived mightily, grew into a nice clump, and proceeded to bloom happily all summer long. Consequently all the other plants have been gathered together and planted at intervals in this border, which runs roughly northeast to southwest. Tall clumps of hemerocallis, delphinium and thermopsis are in the center of the row, with the golden stars planted on the partially shaded and cool northern side. Here they are open to the skies, and receive some afternoon sun broken by shade of nearby shrubs on the west. It is often hard to find just the sun or shade conditions needed by plants from other parts of the country, regardless of their natural growing conditions. I seem to have found what the golden stars want here.

The plants have often been described. I shall mention only that the dark green, roughish and hairy foliage clumps are good all season, and that the short stems of bright yellow flowers are quite profuse and showy—when happy! I have been told that they do not continue blooming all summer in the wild, but this is one of their best points here. There is some variation in the flowers, some having tiny notches at the tips of the rays, while others are entire. Perhaps botanists would make different varieties of these—?

HIGHLIGHTS OF 1957

MRS. PETER H. GOURLEY, *Oakland, Oregon*

HELIANthemums produced the first mass display on my gravel banks, for earlier bloom is that of bulbs and shrubs along the paths. My best helianthemum so far has been the one called 'Buttercup'; it is bright yellow, blooms long, and makes thick mounds of foliage. Second choice has been 'Wisley Primrose,' a light yellow, loaded with large flowers, slightly more upright than 'Buttercup', and with greyer foliage. It, too, makes a close mound of foliage and flowers. The color goes very well with the rose pinks of phlox and dianthus. 'Apricot' is another favorite: the apricot yellow flowers are very large, the leaves wide and glossy, but the habit of the plant is more sprawling, very prostrate. This year I have a new one called 'Rose Glory,' very intricately branched and upright, with flowers of a beautiful rose pink. It is the most persistent bloomer of all the varieties I have. It flowered off and on all summer, and made a real display again in the fall. There are many others, lovely pink ones with narrow grey leaves, coppery reds, orange, white, but so far the ones mentioned above have shown superior plant habit.

During the same season there are the indispensable blue veronicas associating equally well with either the pink or the yellow color range. Pure white *Iberis sempervirens* and white phlox bring into striking relief several clumps of 'Firespray' tulips. This variety was to be ten inches tall, but grew to be twenty. That often happens here with bulbs: those listed as dwarfs elsewhere cannot be depended on to remain dwarf here.

To avoid clashes in color harmony, the pink, rose, purple group are planted around a curve in the bank, which separates them from the yellow, red, orange range. Here *Phlox subulata* and *Daphne cneorum* bloom with the rose and pink sun roses.

During this main spring season, the problem is not that of variety, but rather of what to eliminate to save room for the summer and fall bloomers. There are small brooms turning themselves into sheets of gold, *Alyssum scardicum*, *A. wulfenianum*, and *A. serpyllifolium*, followed by *Arenaria grandiflora* and a host of penstemons. There are several plants of *Cistus corbariensis*, a very ornamental rock-rose, white with a yellow center—a compact shrub, with crisp dark green foliage down to the ground. Another beauty is *Ononis rotundifolia*.

During late June and all July a large daylily bed takes over the center of attention, but there are no summer doldrums on the rock garden. Tree lupines (*L. arboreous*) bloom later than the Russell hybrids. They look, to me, very appropriate among rock plants, as I first saw them growing wild on vast perpendicular cliffs, a gigantic natural rock garden. My tree lupines are all creamy yellow, and bloomed the first year from seed sown last fall. They are large now, several feet tall and wide, with thick red trunks and leaves close to the branches. They bloomed during the first part of the daylily season along with Oregon sunshine (*Eriophyllum lanatum*), oenothera, and hypericums. I have had *Hypericum polyphyllum*, *fragile*, *repens*, and others, and think they are wonderful for mid-season color.

During the warm summer months the main display shifts to the upper bank, which is steeper, shorter, and clay instead of shale. I use much compost here, and water whenever needed. This part is terraced by the house, with three loose walls of lava rock holding three terraces. The steep bank continues with one terrace past the garage.

Color commences here in May also, but predominantly in the range of rose

shades. Dainty aethionema blooms here, with the blue-green tone of its leaves so like that of the nearby junipers. Pink, purple and white rock-roses (*Cistus* 'Doris Hibberson', *maculatus*, and *purpureus*) make a wonderful showing for a long season.

Annuals have been the mainstay of the terraces, so dianthus, campanulas, and *Nierembergia rivularis* have bloomed intermingled with ivy geraniums, godetia, phacelia, violas, globe phlox and lobelia, as well as snapdragons, petunias, cushion chrysanthemums, and two rose bushes. It would make an alpine purist tear his hair, but it was very beautiful, and many visitors were convinced that for ease of upkeep and maximum display, nothing can surpass a terrace.

Campanula cochlearifolia was outstanding this year. I have three kinds, white, medium violet blue, and pale violet. All spring they were busy filling every little hollow and crack in the rocks with their cool green leaves, and then in summer their little bells kept opening so profusely that there seemed no room for any more, but still more kept coming. Pure pink *Erythraea diffusa* (new to me this year) kept the bellflower company, and the two together spelled fairyland. The erythraea bloomed even longer than the bellflower and spread very nicely; I had thought it would be difficult, as it looks so frail, but it seems unusually sturdy. It has little pink cups which look straight up.

Some lavender verbenas grew in beautiful harmony with my old friend *Convolvulus mauritanicus*, and were a delight during the heat and drought of late summer and fall.

Of course, the terraces kept up their display until frost, with so many annuals planted there, but on the lower slopes late summer and fall were brightened mainly by the scarlet trumpets of *Zauschneria etteri* and the bright blue of *Ceratostigma plumbaginoides*.

In 1958 I hope to have a favorable report on *Phlox adsurgens* and on many other new things I am trying.

CHILEAN NOTES - V

CRW

AFTER A DAY spent in drying specimens, we drove forty-five kilometers north-east to Cuesta de Hornos, 6000 ft. high. In the valley the vegetation was dried up, but little grazed, with every indication of a rich flora early in the season. Where a small stream (the first we had seen in the lowlands since leaving Ecuador) crossed the road, we came upon *Drimys winteri* at the northern extremity of its range. It is the southern representative of our magnolias, but nothing to arouse one's longing, for the whitish flowers were small and unattractive. A bit higher up, within a stone corral were two flowering plants of nicotiana, the genus which was the particular objective of our expedition: Dr. Goodspeed's far-reaching studies of the tobaccos have at last been recorded in a recently published volume of great botanical value. The stocky yard-high calceolaria was there too, while at the very summit, the dry hillside was thickly dotted with foot-wide mats of a calceolaria that I took to be *C. arachnoidea*, and wondered why the English gardeners were admirers of it. It turned out to be *C. cana*, with rosettes of two-inch leaves covered with thick white wool, looking exactly like *Stachys lanata* except for the flowers, on sixteen inch stems sparsely set with tiny slippers no more than half an inch across, ranging in color from dirty lavender to purple, with the usual maroon dots. Here and there were rather large mats, flat on the ground, of a treasure of treasures, *Argyria huidobriana*, which later, and higher up, we met in even more breath-taking form (if indeed both collections are of the same species, which I am inclined to

doubt). Over the mats of grey-pubescent, finely divided leaves, rising no more than a couple of inches, were trumpets an inch and a half long and as much across, widely flaring, in shades of yellow, orange, and a peculiar shade of pink, splashed and streaked with darker colors. I searched frantically and vainly for seed, but this amazing beauty is still unknown to gardens. Probably it is not fully hardy, and it would certainly resent wet summers, but in such a garden as that of Ray Williams in California it should grow like a weed—and leave speechless all who see it in bloom. As we drove back to town we stopped for two *mutisia*s growing on steep banks, one with rose-pink daisies, the other with orange-scarlet ones and inch-long holly-like leaves. In the lower quebrada was still another, clamboring over high shrubs, with small thick dark green leaves, narrow and deeply notched, and brilliant red flowers. For those who have never seen a *mutisia* (and only one or two can be found in seed lists, for their seeds are said to be of low vitality, although once germinated they are easy enough to grow in a cool greenhouse), their flowers can be likened to those of a small *gerbera*; I know of no more dazzlingly beautiful climber. Our harvest that day seemed scant, yet on cataloguing it we found that there were thirty-six different numbers, four of them great beauties.

By this time John had rejoined us, in perfect health once more, although for a day or two he stayed at the hotel and cared for the drying of the specimens. On November 21 we returned to Cuesta de Cavilolín, hoping to give him a treat. But in the nine days since we had been there, the fogs had lifted, and the ridge was well on the way to becoming as barren as its neighbors. Only then did I fully realize how evanescent is the flora of the Chilean fog belt, and how many good plants we had missed by not looking for them at precisely the right moment. Probably la Quebrada Jardín really lives up to its name—for a few days. However, on Cavilolín we got a good supply of seed of a tubular red and yellow *habranthus* (fide Rodolfo—it was past bloom on our first trip), of the bright yellow *sisyrinchium* and several other monocots, of the dull pink *mutisia* and two herbaceous *calceolarias*. Higher up there was nothing new or exciting, although we collected thirty kinds of plants not harvested on our first trip—and probably failed to get many more which had gone under cover with the first sunny days.

In late November my dream of exploring the snow-streaked peak to the north of Illapel was at last realized. The German manager of Mina Sanchez at the foot of the mountain, escorted by Rodolfo, called upon us at the hotel and, after assuring himself that we were indeed plant hunters and not prospectors in disguise, offered us horses for the trip. The next morning we drove northward the twenty-five kilometers to the mine, where we were offered breakfast, and eventually mounted on two horses and a mule. Escorted by a workman from the mine, we rode up the steep hillside to a cabin where after nearly an hour's delay, our escort was replaced by another man who would guide us up the mountain. Up the valley we went on a trail that barely existed, over steep sloping rocks, high rock steps, often no wider than a horse's hoof, with precipitous drops on our left. The closely grazed slopes, dotted with shrubs and cacti, had nothing of interest to us. We approached the peak all too slowly, and when at length it seemed at hand, found that the ravine turned and ran parallel to the mountain for a considerable distance. At last, after a few breathless upgrades, the goal was at hand—but was separated from us by another ravine. This we managed to skirt, and finally came out on a slope that led toward the summit.

Here we found the first flowers of a new *argylia* of which plants had been in evidence for some time: a prostrate one, with leaves like those of *A. potentillaefolia*, and flowers only a half-inch across, of a bilious shade somewhere

between yellow and the color of canned "pink salmon"—*A. uspallatensis*, I believe. A bit higher we came upon a new shrubby calceolaria, two or three feet high, with minute grey leaves and long racemes of tiny golden flowers in veritable clouds, in effect a bright yellow heath: a marvelous plant, doubtless tender, but how it would shine on the similar dry hillsides of southern California. Seed was not yet ripe, and I fear this treasure is still unknown in gardens. Here, too, appeared what to me must be the king of all schizanthus, growing on a hot parched slope, although the species (and hybrids) in cultivation seem to require exactly opposite conditions. The two-foot plants bore a multitude of flowers all open at once, each about one and a half inches across, with deeply cut and fringed petals, the uppermost yellow, the others pale to deep lavender. Another thrill was just ahead: at first a few scattered plants, then a whole bank of a cruckshanksia, prostrate plants to eight inches across, each with six or more heads of bloom bearing inch-long bracts of purest white below the golden tubes; here and there a plant had bracts of pale pinkish lavender. Of all the beautiful plants I have seen, none remain more vividly in my memory than these exquisite members of the Rubiaceae—and there are rumors that, before these words appear in print, seeds may be on their way here, a dream come true! For, of course, I searched in vain for even one seed that might have begun to brown, before riding despondently up the trail. Finally, at 2:30, very late in the day for much collecting (especially with the long return trip to be made that same evening), we halted where a little stream tumbled down through rock slides from the summit a thousand feet above, wolfed down a little food, and set out in quest of further treasures. The nearer slopes were thickly dotted with the flower stems of a leafless amaryllid only three or four inches high; the flowers, in umbels, had reddish brown tubes three-quarters of an inch long, and at right angles to the tube, greenish lobes, quaint, but hardly beautiful. A white-flowered nicotiana only a few inches high likewise had no claim to beauty, but near it grew a calceolaria covered with thick white wool, six to eight inches high, with buds of deepest green and flowers of blackish purple, red within—doubtless *C. arachnoidea*, which certainly, if introduced from this chilly height, just below snowbanks, should prove frost-hardy. Along the stream grew another calceolaria, or possibly two, with green rosettes, still in bud and undecipherable, although I have a suspicion (strengthened by tearing open some of the buds), that their flowers are yellow. A little trailing plant had pinkish-white flowers a quarter-inch across shaped like those of *Lithospermum canescens*, flaring tubes. A white crucifer and a tiny white arenaria-like plant completed our collections, for it was too late to investigate the snow-flecked and apparently still lifeless slopes above us. There was one last find, as we started down the slope: a lone red flower, with inch-long rays, of a shrubby mutisia only a few inches high. I was running true to form—finding, to John's perpetual exasperation, a single specimen of a plant; as usual, in spite of our concerted efforts, no more of the mutisia could be discovered. Back down the mountain, stopping only to admire once more the cruckshanksia and argylia. John pointed out a little yellow caio-phora trailing through bushes, but we were all too weary to undertake the hazardous task of putting it into the press. I did slip off my horse once, near the end of the trip, to gather a white nicotiana growing in a field. It was eight-thirty when we reached the mine, and after thanking the mine officials for their kindness, and tipping the guide, we dashed madly back to Illapel, fortunately arriving there just before the dining room stopped serving dinner.

(To be concluded)

BOOK REVIEWS

Gardening in Containers. 76 pages, illustrated. New York: Brooklyn Botanic Garden, 1958. \$1.00.

The title suggests that the current Handbook should be of interest to those who wish to grow alpiners without a rock garden; instead, it deals with roof gardens, window gardening, the vertical garden or moss wall, and a novel hydro-culture-pot. The sole reference that seems applicable to our interests is an article on miniature gardens by Alys Sutcliffe.

Clearly and compactly written, this Handbook should be of great value to city gardeners and to those growing plants in containers on terraces. The plain dirt gardener will find in it little that concerns him.

Handbook on Rock Gardens. Various authors. 96 pages, profusely illustrated in color and black and white. New York: Brooklyn Botanic Garden, 1952. \$1.00.

In spite of numerous requests for books on rock gardening suited to beginners, this *Handbook* seems to have escaped the attention of the editor, and of his correspondents. The few American books on the subject have long been out of print, except the Cornell bulletin which was recently reprinted. The *Handbook* deals with its subject much more extensively, and in general more satisfactorily, and should be extremely useful to newcomers.

The first few pages deal with the use of rocks in the garden, and in the general landscape picture, and the photographs offer many suggestions for design and construction. The article on soils and water is almost surprisingly good, although one must protest the caption of the accompanying picture: "Gentians cannot endure lime". In the list of plants for wall gardens, no indication is given of whether a plant needs sun or shade; at least two tender species are included, as well as some that almost certainly would not appreciate being planted in a wall. Stephen F. Hamblin's "Rock Plants for Beginners — and Others" is far more discreet in its choice of material, and in its statement of the needs of the species considered. "Rock Garden Clinic" gives satisfactory answers to many questions. William Horsford discusses native material for the shady garden, and George W. Kelly describes alpiners of the Colorado Rockies without indication of their cultural requirements. The special problems involved in rock gardening in the South, in California, and in a city receive considerable attention. Shrubs and campanulas, herbs and pests are treated in separate articles. The articles on propagation are probably too brief to be of much use, particularly as the list of plants propagated by cuttings mentions genera only.

* * *

I believe the cultivation of vegetables to be degrading and immoral. All purely material pursuits are immoral; the growing of vegetables is purely material, and for the sake of food. Therefore it is immoral. Whereas the cultivation of a flower, that gives you no earthly reward, but the solely spiritual one of contemplating loveliness (no matter whether you find it in a Primula, or an Orchid, or a horrible Cockscomb, or a Show-Pansy—the desire to find mere beauty underlies all the culture of them always, in its varying powers) is therefore obviously elevating and enlarging to one's soul, because it is so entirely unprofitable to every other part of one.

—Farrer

OBITUARY

MRS. WALTER D. BLAIR

Elizabeth Hollister Frost Blair, widow of a past president of the Society, and well known to members in the New York area as a keen gardener and delightful hostess, died in Rochester on April 9 at the age of 71.

Mrs. Blair was a poet and novelist whose works won high critical acclaim. She published three volumes of poetry, "The Lost Lyrist," "Hovering Shadow," and "The Closed Gentian;" a collection of stories, "The Wedding Ring;" and two novels, "This Side of Land: An Island Epic," and "Mary and the Spinners," the first praised as "a work of great and impressive beauty;" and wrote for numerous magazines, including *The Atlantic Monthly*. Three articles by her were printed in the *Bulletin*.

Her exquisite taste was reflected in her house and gardens, one of which was a deep glen near Tarrytown which glowed with primulas and myosotis, another, a heather sanctuary near Nantucket. She was a regular attendant at New York meetings of the Society, generous of advice and encouragement.

MRS. G. R. MARRIAGE

Kathleen O'Neil Marriage died in Colorado Springs on February 22. Her name may be unfamiliar to those who have joined the Society in recent years, for ill health had restricted her activities since the early 1940's, but early members will remember her well for her introduction to cultivation of the alpine of the Colorado Rockies. Although D. M. Andrews preceded her in making available many of the choice mountain plants, in his later years he offered little but lowlanders, and it was to Mrs. Marriage's Upton Gardens that we sent for such treasures as *Boykinia jamesii*, *Aquilegia saximontana*, and *Phlox condensata*. Pike's Peak, almost in her back yard, was her favorite hunting ground, but she was well acquainted with many other regions of the Colorado Rockies, although she always modestly disclaimed any comprehensive knowledge of the Colorado flora. She was also an iris enthusiast, and it was these plants that supported the alpine part of her nursery.

Although her catalogs sparkled with wit, she was usually most reluctant to put her knowledge on paper, and only a few short articles by her appeared in this *Bulletin* and in *The Bulletin of the Alpine Garden Society*. Colored slides of Colorado alpine which she showed at the 1951 Rock Garden Plant Conference in London were praised as some of the finest color photographs ever displayed.

It was my good fortune to visit her in her home, to admire the alpine which she was growing under lath frames, and to discuss the various problems which they presented in cultivation. A couple of years later, she and her daughter Molly (as clever and witty as her mother) joined me for a few days in eastern Idaho and western Wyoming. Although even then Mrs. Marriage was able to do little walking and no climbing, she was able to see for the first time such rarities as *Kelseya uniflora*, *Linum sedoides*, and an unusually fine form of *Collomia debilis*, and to marvel at the floral display on Teton Pass, far more brilliant, she insisted, than any in Colorado. Those days together remain one of my most delightful memories.

FRANK KINGDON-WARD

Frank Kingdon-Ward, O.B.E., F.L.S., V.M.H., died in London on April 8 at the age of 72. One of the best-known plant collectors, over a period of more than forty years he made some twenty plant-hunting expeditions into the high

mountains of western China, Tibet, and Burma. His introductions run into the hundreds, of which the most successful are perhaps rhododendrons, *Meconopsis baileyi*, and *Primula florindae*, while the recently discovered *Lilium mackliniae*, named in honor of his wife, has drawn much attention. Few of his introductions other than the primula mentioned above have been grown successfully by gardeners in this country (and rhododendrons in the few favored regions where the Asiatic species are happy), but at least a few known *Lilium wardii* and *Cyananthus lobatus insignis*.

It is his books with which American rock gardeners are most familiar, for during the intervals he spent in England between expeditions he was a most prolific writer, although his books lack the vivid coloring of those of Farrer. Perhaps the most popular of them is the early "The Romance of Plant Hunting," still available in inexpensive reprints; others include "The Land of The Blue Poppy," "The Mystery Rivers of Tibet," "Burma's Icy Mountains," "Assam Adventure," a book on rock gardening, and "Berried Treasure."

He was the recipient of many honors, including both the Victoria Medal of Honor and the Veitch Memorial Medal from the Royal Horticulture Society, the Royal Medal from the Royal Geographical Society, and the Livingstone Medal from the Royal Scottish Geographical Society.

He was married twice, and his second wife, Jean, who survives him, was his companion on all his recent expeditions in Burma and Assam.

PLANTS WANTED

Mr. R. E. Lincoln, 1625 Shookstown Road, Frederick, Maryland, is anxious to secure the following phlox for his breeding work:

Phlox adsurgens; *P. speciosa* (especially from the California-Oregon border); *P. nana* and *P. mesaleuca* (especially yellow or yellow-eyed forms); *P. idahoensis*; and the following varieties named and introduced by Mrs. J. Norman Henry: *P. bifida alba* and 'Bunny'; *P. amoena* 'Tullapoosa'; *P. nivalis* 'Mary Alice', 'Azure', and 'Gladwyne'; *P. henryae* 'Blue Henryae' and 'Blanda'; *P. divaricata* 'Chattahoochee'; and 'White Chattahoochee'; *P. subulata* 'Molly Davis'; *P. ovata* 'Pinkster'; *P. carolina* 'Gloriosa', 'Gloriosa Candida' and 'Gloriosa Lavendula'.

SALMAGUNDI

ONCE MORE we must appeal to our readers for more articles for publication in the *Bulletin*. The response to our request in late 1956 was generous enough to keep a supply of material on hand until now, and to permit choice of articles so that the contents of each number could offer considerable variety, but now we are scraping the bottom of the barrel. Not that the material is of any less quality, for we deliberately reserved several of the finest contributions until now. But not enough remains to fill the October number, and apparently the editor will have to fill the gap with whatever he can find to write about in his own garden. Several articles scheduled for publication now have been held over, in order that not everything in the October number will be by the two or three writers who have sent in more than one story. As for January, the number that you wish to arrive on schedule, as with it comes the Seed Exchange List, nothing is available except an installment of a new series. Copy for the January *Bulletin* must be ready in late October because of delays during the holiday season, so please send in material—and soon!

A check of the 1955-56 Index reveals that less than 5% of the members

of the Society furnished material for the *Bulletin*. To them we are immensely grateful, and to the non-members, mostly overseas, who have so generously written of their experiences. But what of the other 95%? Surely they, or most of them, have rock gardens and have information that is well worth passing on. Members in the Northwest, in particular, grow many delightful plants not yet known to members in other parts of the country, yet in the four years during which we have served as editor, only five, other than the Secretary of the Northwest Unit and the Director of the Seed Exchange, have supplied material for the *Bulletin*. Tell us of your successes, or even of your failures, for from them we may be able to deduce why a plant will not prosper for us, either. Anyway, write—*don't* be in the 95%!

* * * *

"If Winter comes"—and come it did. For some years past, the Storm Country has been lulling the fears of city folk with abnormally mild and snowless winters, coaxing them farther and farther from towns and their shelter. December, even at Christmastime, had days in which the thermometer rose above sixty. Then with the turn of the year, the wrath of the storm gods was unleashed, gradually at first, with snow piling on snow, and no January thaw. By mid-February moderate snowfalls, followed by gale winds, sealed up the roads until it was impossible to keep the main highways open, and secondary roads were left untouched. Air lifts were set up to carry food and fuel to im-provident strays from the city, though country people, wise to the ways of these hills in winter, suffered little from a week, to three or more, of isolation. Your editor, distrusting the predictions of the caterpillars (all, last fall, black only at both ends), had discreetly retired to an apartment in town for the winter. When, in early March, he was able to reach his home, drifts more than twelve feet high lay between house and road, even after a heavy rain had reduced their height by nearly half. Not until April 22 did the last of those snowbanks vanish from lawn and rock garden, and on May 6 one still lingered on an open hillside west of Groton.

The effects of the winter have been bewildering and disastrous. Rabbits stripped all the bark from branches of dogwoods, crabs, and large apple trees as high as eight feet from the ground. Many shrubs and small trees were broken off nearly at ground level, and lilacs have been split at their base. Tulips grew eight inches high under the snow, while the little iris of the *Reticulata* section tried in vain to open their flowers while buried. Some supposedly tender plants, among them *Celsia acaulis*, came through unscathed, while *Mertensia pterocarpa*, always before hardy, perished, as did most *edraianthus*, the latter even in the alpine house.

The early bulbs flowered promptly and magnificently, but cold, rainy weather and strong winds have held everything else back (even seeds are hesitating to germinate), so that even today, May 15, plants long feared dead were found just breaking the soil; a few, among them *Phacelia platycarpa*, despairing of any warm weather, are quietly fading away. Plants remain in bud for weeks after they show color, even in the alpine house, and the few that do flower remain in good condition for several weeks. Juliana primroses are only now blooming, the *kabschia* saxifrages are still in flower, and except for true bulbs, little other than anemones furnishes color. *Anemone blanda*, continuing its mad self-sowing, has brightened a large area, with flowers that must be twice their normal size, on some plants more than three inches across. *AA. nemorosa* and *ranunculoides* are at last in full bloom, while 'St. Bavo,' and brilliant red *A. fulgens* display their dazzling poppies (which do not belong in a rock garden, but where else can one grow them in the open?) whenever encouraged by a

bit of sunlight. But the rest of the garden, plants that should be beginning to bloom now, show no sign of bud.

* * * *

Fortunate indeed is the gardener who purchases well-developed plants, who keeps them properly marked with labels that never fade or become misplaced, and who allows no stray seedlings to linger in his territory. For him weeding must be a simple matter, but for one who puts young seedlings here, there, and everywhere to discover which situation pleases them most (or more often, which, if any, they will tolerate), who labels nothing but trusts to an ever-weakening memory, weeding becomes a nightmarish battle of wits with all the plant kingdom. For almost every desirable plant has, at least in its early stages, a mimic among the weeds; all too often, a rank invader is allowed to remain because it so closely resembles a cherished rarity, while again and again the hand is stayed—sometimes too late—as it grasps a treasure one has long struggled to establish. Great are the virtues of orderliness in the garden, and yet—for orderliness is it worth passing up all the delightful surprises that crop up here and there, those surpassing lovely *Anemone blanda* in crevices where they could never have been set by hand (and even in the heart of clumps of encrusted saxifrages), or the lovely fragrant rose-pink violet that came from nowhere, of twice the size and brilliance of color of popular 'Rosina'. The founder of the seed firm of Thompson and Morgan once protested that countless desirable variants were destroyed by the too-neat gardener, before ever they had a chance to show their worth. So, let those who will have every bit of the garden in perfect order; we'll take our chance with the weeds and stray seedlings, and rejoice in the gems that would otherwise be lost.

* * * *

Our frequent contributor, Major Ronald Ginns, is in contact with an Argentinian who is interested in collecting seeds of the wonderful Patagonian plants, while we have hopes that the companion of our Chilean wanderings, Sr. Rodolfo Wagenknecht H., may be persuaded to do likewise in central Chile. Anyone interested in supporting either project is invited to contact the editor.

* * * *

If the October *Bulletin* does not reach you at the usual time, please be patient. We hope to spend part of the summer collecting seeds in the Rockies (from which you should benefit, by way of the Seed Exchange), and while the first stages of the *Bulletin* will be completed before we set out, the page proofs will have to await our return, perhaps delaying for a week or more the printing and mailing.

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