

BULLETIN

of the

AMERICAN

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January, 1963

No. 1

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BULLETIN

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Editor

ALBERT M. SUTTON

9608 - 26th Ave. N. W., Seattle 7, Washington

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SOME NOTES FROM CHRISTCHURCH, NEW ZEALAND

T. M. LAURENSEN, *Christchurch, New Zealand*

In Christchurch, New Zealand, "The City of the Plains", we have quite a group of alpine gardeners. Our Canterbury Alpine Garden Society, formed in 1960, has already over a hundred members, many of whom are real enthusiasts. With an average rainfall of only 23 inches we have a constantly recurring struggle against drought, but in other respects we are most fortunate. From our home on Cashmere Hills, to the south of the city, we look out over the city and the plains beyond it, to the Southern Alps.

In summer these mountains are a blue line on the horizon, but in winter, when the heights are covered with snow, the true mountains distinguish themselves from the blue foothills in front. Sometimes these foothills, too, are white and their chill breath reaches the shivering city. Occasionally the city and the plains disappear under a froth of fog, and then we on the hills look out through the clear air above to the shining mountains which seem miraculously to have moved forward across the vanished plains to stand on our doorsteps.

It is in the summer, however, when the mountains are only a blue line again in the distance, that we alpine garden lovers set off for our happy hunting grounds. Within easy distance for a day's excursion are several good access roads leading right up into the alpine meadows. At Jack's Pass even our older enthusiasts can collect *celmisias* and their seed, *Raoulia grandiflora*, *Gaultheria depressa*, *G. rupestris* and many other treasures with a minimum of effort, whilst more agile members climb the crags nearby for *Helichrysum selago* and its variety (var. *microphyllum*), *Hebe cheesemani* and *H. raoulii*. Further up still, where the peaks rise to 4,000 and 5,000 feet, *Celmisia traversii* and *Raoulia mammillaris* can be found.

At Craigieburn, the North Canterbury Ski Club has built a magnificent road right up through the beech forest to their mountain house at 4,400 feet. The average private car can negotiate only the lower half, but it is a pleasant hike up from the parking place in the bush. From the mountain house the jeep road goes up across thickly matted meadows, to the ski tows, higher still. These meadows, which even in summer are so wet underneath as to be almost bogs, are covered with acres of *Phyllachne*, like hard bright green moss, with *Celmisia viscosa* and

C. lyallii and many others, tall aciphyllas of several species, *Hebe lycopodioides* and a host of other small plants.

The enthusiast can then scale the half circle of crags behind the ski grounds, and these, which must rise between 5,000 and 6,000 feet, are the home of some really fascinating alpine. *Coprosma repens* covers yards of rock and is bespangled with bright orange-red berries. On the ridges every crevice is packed tightly with the hard gray rosetted humps of *Raoulia mammillaris*, and where more soil has settled, there are the little furry cushions of *Haastia pulvinaris*, some one inch, others three inches across, and there are large patches of *Celmisia sessiliflora*, not unlike a larger version of *Raoulia grandiflora*. If one ventures on to one of the vast unstable scree slides one may find the delightful curly gray leaves of *Cotula atrata*, or even, if very fortunate, one of the most beautiful of all, the gray and pink leaves of *Ranunculus haastii*.

During the past summer season I have collected in both these areas and I hope, before the weight of increasing years prevents me, to explore many other parts of this great mass of mountains which form a backbone right down our South Island. I must confess straight away though that I have not yet grown many of our alpine from seed. After all, I can collect the plants, so I'll leave the problems of their seed raising to you, while I struggle with some of yours. I do hear that many New Zealand alpine are difficult from seed, particularly celmisias, which are reputed to have a very low germination rate, especially when the seed is not fresh.

Our collecting season begins in late November with the first raoulias, but most seed is collected in February and March, so that, unfortunately, by the time they reach you through the seed exchange they will be nearly a year old. However, the following brief notes may be of some help and interest.

Aciphyllas vary from tiny curiosities of a few inches to monstrosities with flower heads 8 to 10 feet tall. The two I have collected are both for the larger rock garden and they are curious, or perhaps handsome, rather than beautiful. The foliage sits low in a neat rosette, but beware of walking too close. It has a hundred hard sharp green knives.

Aciphylla colensoi has quite broad basal foliage, half an inch wide or more, with deep cream edges to each knife blade. The flower head rises up to 24 inches, a solid spike of creamy flowers, also bristling with green and cream spikes. *A. squarrosa* has much finer, more graceful foliage, spreading out in a slender plume of plain green. In mid-summer the flower heads rise to five feet or more, and the spikes, which protrude all the way up, stick upwards for an inch or so and then turn downward in a graceful curve.

Astelia cockayneana is also for the larger rock garden. It inhabits some lower alpine meadows at about 2,000 feet, where it shines in the sun like a slender flax. *Bulbinella hookeri* is rather like a small golden-orange *Kniphofia*, but more suited to our rock gardens. I first collected it on the swampy bed of a stream, where its seed heads were 18 inches or more, and in consequence, I planted it in my wettest and shadiest spot. Since then, however, I have found it growing in some of the driest places and under these conditions it grows only 9 to 12 inches and is even more desirable.

Celmisia coriacea, *C. spectabilis* and *C. discolor* have all been collected at Jack's Pass at just over 2,000 feet. *C. coriacea* is the noblest, and one of our finest alpine. It varies greatly in size and form, but at its best its foliage is a dark silver-gray, stiff and proud, its leaves a foot or more long and perhaps two inches wide. The flowering heads in mid-summer rise to 18 inches or more. *Celmisia spectabilis* is a comparatively common species, but none the less, a very fine one. Its leaves are stiff and a shining dark green, with undersides of deep

cream felt. They are similar in shape but smaller than *C. coriacea*. *Celmisia discolor* is of quite a different form, a carpeter, with foliage only two or three inches high, but forming, in nature, soft gray mats, yards across. You will be fortunate, however, if it occupies more than six inches in your garden. Its white daisy flowers rise to about six inches. In Christchurch, with our low annual rainfall, we grow celmisias with only moderate success. Too often they flower and die. In their alpine homes they are never dry, and we suspect that this is largely the trouble here, although it may be that some are not long-lived.

Gaultheria depressa is a spreading, quite prostrate shrub. It has cream flowers, but its chief glory is its berries, which are huge, often over half an inch in diameter, and of the purest white. Sometimes in early autumn they almost cover the plants.

The helichrysums all like a hot spot with plenty of sunshine. *H. bellidioides* spreads a tangle of slender stems which can be invasive. In summer it covers itself with white everlasting daisies, half an inch in diameter. *H. selago* var. *acutum* has much smaller white flowers, but forms an attractive small shrub with leaves closely adpressed all the way up the branches, not unlike a good whipcord hebe. *H. selago* var. *microphyllum*, in form, a much finer version of the above is to me the outstanding member of the family. It inhabits tight crevices in the rocks where it makes compact bushes of a foot or more in diameter and about four to six inches high. The late summer flowers are only a quarter of an inch across, but so thickly do they come that the whole plant is covered in a sheet of bright yellow.

Leucogenes grandiceps is the South Island form of our so-called "New Zealand Edelweiss". The North Island form is *L. leontopodium*. This describes the flowers moderately well, although they are more colourful than those of a *Leontopodium*, and the synonym in no way does justice to the foliage which is of a very fine silver-gray. The genus *Leucogenes* usually inhabits rock crevices from about 5,000 feet upwards, but I was surprised to find a healthy clump of it by the car park at Craigieburn, which must be less than 3,000 feet. Perhaps it was a stray plant washed down by the stream, but it was growing happily in a tangle of *Helichrysum bellidioides*. It is not an easy garden subject and is probably best suited by scree conditions.

Myosotis saxosa is one of several good small native species of that genus. After two years in my garden it is a neat clump, six inches across and really prostrate. It has quite large cream-white flowers in racemes of 3 or 4 inches.

Ourisia caespitosa is a charming prostrate creeper with flowers of clear white with yellow throats. I have seen it lighting sheets of ground in a moist place near the bottom of the Craigieburn road. The seed collected, however, came from a knoll just below the mountain house at 4,400 feet. It seems to be well established in my border, but friends with longer experience tell me it is very reluctant to flower in captivity. Almost certainly its main requirement is plenty of water.

The genus *Raoulia* is well known abroad mainly by its representatives, *RR. australis* and *glabra*. *R. tenuicaulis*, also, is liable to be invasive, but planted by the edge of a path or steps, it will make a delightful silver-green carpet which can be trodden on with impunity. Young plants are silver-green, but as the mats spread the centers become tightly packed and green, while the ever-prospecting tendrils around the edges are still silver. *R. haastii* is quite different. It forms a hard prostrate mat of bronze-green. It likes poor, stony soil, is slow growing and unlikely ever to be invasive. *R. grandiflora* is again quite distinct and is generally considered the best. It forms a carpet of spiky green rosettes, each half an inch or more across, which in late spring produce half-inch white daisy flowers. If you are fortunate enough to establish a small patch of it, be content and leave it undisturbed.

Lastly we have *Raoulia mammillaris*, an inhabitant of the highest rock crevices at 5,000 to 6,000 feet, which it packs with hard balls of gray rosettes. Each rosette, about an eighth of an inch across, is a tiny work of art, composed of rings of minute furry leaves, which seem to be tipped with a lighter gray, almost white.

LYSIMACHIA NUMMULARIA

FRANCES KINNE ROBERSON, *Seattle, Washington*

Various theories exist relative to the name of a certain European Primrose-Family representative — LYSIMACHIA. One story relates that the Greek, Dioscorides, honored King Lysimachus of Thracia, who used this plant medicinally, by calling it after him. Another speculation traces the meaning of the roots of the word—"Lysis" meaning "abatement" and "Mache" meaning "strife"—to show reference to the purported soothing properties of the plants in this genus often known as "Loosestrife".

More than one plant carries the common name of "Moneywort" but none more truly earns this sobriquet than *Lysimachia nummularia* whose pairs of round leaves are attached to the creeping stems by such short stalks that they appear to be unattached light green coins held in such regular formation perhaps by some unknown magnet.

The long stems trail over the soil or support themselves atop other ground covers like one pattern embroidered over another. Each solitary flower is borne on a pedicel approximately as long as the leaf in the axil of which it emerges. The primrose yellow flower has five oval corolla lobes in wide cup formation about an inch in diameter.

This perennial first came to my attention as a ground cover for moist areas although one recent reference recommends dry shade. It is rampant and invasive when happily situated, but these qualities sometimes are recommendations for a plant to be used in a problem spot. I doubt that it could be smothered out by other plants since its stems so readily emerge above and travel over the foliage of neighboring growth. Therefore its use should be limited to areas where it will require no checking. Nor does it have a great deal to recommend it in winter except that it will help prevent erosion where that is a problem.

Planted near a bird-bath or beside a pool the stems will creep into the water and develop roots. I have seen a stump with *Lysimachia nummularia* planted at the base and creeping up as well as around it to cover the ravages of time. Another stump has a hollow center filled with soil to form a planter. Several low shrubby plants grow there in with Moneywort overlaying them so that one cannot miss its cheerful flowers in summer. Rustic baskets and vases often contain these plants with their strings of verdant coins gracefully flowing over the sides.

Moneywort, known also as Herb Two-pence or Creeping Charlie or Creeping Jenny, comes readily from seed sown in winter but is more commonly grown from divisions made at almost any time of year in our climate but limited to late spring and early fall in colder areas. We also root tips six to ten inches in length by tying them in loose bundles and half immersing them in water. These serve as aquarium plants and will thrive completely submerged when once rooted. The foliage contrasts in an interesting fashion with some of the more commonly used aquatics. Cuttings may also be rooted in sand or some other medium but this hardly seems worthwhile.

Some people will call it the "yellow peril" or "fool's gold" but to others *Lysimachia nummularia* will be "money-in-the-bank" as it spreads its covering over a raw slope.

NORTHWEST UNIT GARDEN TOUR

FLORENCE FREE, *Seattle, Washington*

The members of the Northwest Unit had the pleasure of visiting three gardens early this summer. Since all three gardens belonged to ARGs members, we dared to ask a further favor of the owners. We asked them to tell about their gardens for this *Bulletin* report, i.e., what plants they particularly enjoyed, what problems they had encountered and what seemed to especially impress the visitors.

These gardens are located in a suburban area and were similar in that the native brushland, consisting of second-growth Douglas fir, vine maple (*Acer circinatum*), red alder (*Alnus rubra*), salal (*Gaultheria shallon*), red huckleberry, (*Vaccinium parvifolium*) ocean spray, (*Holodiscus discolor*), etc., not only formed a background to the gardens but was incorporated into the planted areas.

The garden of the H. H. Millers is located on a lake. A long driveway through fir woods brings one to propagating gardens and then to the house. In front of the house a path descends a wooded slope to the lake shore. The garden is an ideal setting for the ferns and rhododendrons that Mrs. Miller speaks of in the following:

"We enjoyed having the ARGs members tour our garden and the day went all too quickly. Consequently, there was very little time to discuss plants with anyone. So we think it would be nice if each one of our guests would come back again so we would have more time to visit with them.

"Our garden is mostly woody and so requires less maintenance than more formal gardens. But we have too much shade, which cuts down on the quantity of bloom and makes our plants more leggy than we like. Besides that, we have voracious tree roots throughout, providing tough competition for our garden subjects. However, many plants and shrubs in the *Ericaceae* family seem happy here and we are happy growing them. Species of rhododendrons, gaultherias and many other small ericaceous plants are of particular interest to us. Species of primroses and several kinds of hardy cyclamen seed themselves widely about. Iris species do well here, too, in either sun or shade, and combine well with our other material. We have ferns planted throughout the garden and find them very satisfactory woodland plants. The smaller ferns, we think, are more appealing and our favorites are *Cheilanthes gracillima*, *C. tomentosa* and the dwarf maidenhair. Of course, we grow many other kinds of plants, but those mentioned above are favorites.

"We consider dwarf plants especially valuable as they have the desirable quality of confining themselves to a smaller area. Raising much of this material from seeds and cuttings provides us with an absorbing (and time-consuming) pastime.

"Being a collector of plants is certainly not conducive to producing good landscape effects but it is nevertheless a most interesting hobby and, after all, shouldn't each garden be geared to the special interests of its owners?"

A short distance from the Miller garden is the home of Mr. and Mrs. Ray Brandes which is situated on slightly hilly terrain. A comfortable patio behind the Frank Lloyd Wright designed house invites one into the garden and down paths between the knolls in quest of beauty spots. We found many such spots, but the one that impressed us the most was where a depression in the side of a small knoll had been fashioned into a "keyhole" nook large enough to accommodate a rustic table and chairs. On its enclosing slopes grew *Linnaea borealis* var. *longiflora* in astonishing profusion which made of this nook an exquisite garden retreat. Mrs. Brandes says:

"It is difficult to evaluate the real impressions of visitors when it was possible to talk to only a few. However, we noticed that everyone seemed to enjoy the *Linnaea borealis* planting. It was in full bloom and very fragrant. Among it grows *Chimaphila umbellata*, *Vaccinium ovatum* and *Gaultheria ovatifolia*, to mention just a few items.

"As to our favorite plant material, every season brings its own favorites. From November until March it is *Pieris floribunda*. There are large and small groupings of it all through the garden, much of it visible from the living room. The foliage of these shrubs comes through the coldest winters without a sign of discomfort. The creamy clusters of flower buds give the appearance of being in bloom during the whole gray season, especially under illumination.

"Salal and Oregon grape are always lovely, never demanding to be watered or fed or weeded. Only an occasional blackberry vine comes through them. These native evergreens make it possible to add more and more pleasant spaces to our garden.

"The autumn foliage of *Cercidiphyllum*, Japanese maples, *Oxydendrum arboreum*, *Enkianthus*, *Rhododendron Schlippenbachii*, the various dogwoods and *Rhus typhina laciniata* bring such a crescendo of color and beauty to the beginning of the dark season when they are the most needed.

"And the gentians—*G. sino-ornata*, blooming just now as I write, and in the spring there is *G. acaulis*. I believe we keep them all blooming year after year because we never let their roots get dry in summer.

"Bracken we honor for the fertility it brings. We use this fern as a mulch to improve poor soil. It is work, yes, but it is amazing how quickly it changes the texture of the top layer of soil, making it light and porous.

"A little piece of rooted *Arctostaphylos uva-ursi* can be put into unprepared ground. As it keeps growing we weed around it and loosen the soil a bit and after a few years we have a lovely planting instead of weeds."

Across the road from the Brandes' is the Page Ballard home. Their garden, as viewed from the veranda along the front of the house, shows a sweeping lawn gracefully framed by beds of choice shrubs and trees with a beautiful grove of Douglas firs at the bottom of the garden into which woodland paths penetrate, offering glimpses of the treasure-trove of plant material to be found there. Mossy stumps, relicts of the virgin forest, have been carefully preserved, or recreated, and make ideal nurseries for *Cornus canadensis*, various gaultherias and brambles that Mrs. Ballard speaks of in the following:

"In answer to your question—what gardener is able to tell just what plants he prizes beyond all others? Does it not depend on the season, the well-being of the plant, (and so often we cherish some miffy bit which has never flourished), and his own particular bias? We know that we hold dear many members of the plant kingdom which would be ignored by most of our gardening friends. We have treasured *Petrophytum hendersonii* ever since that day when a generous friend brought us a minute cutting from her garden. We dug it up frequently and eventually had the satisfaction of finding the beginnings of roots. Only now is it of a size that demands the attention of the average visitor; of course, rock gardeners have thrilled to its charms always. This year it bore eleven white bottle-brushes and even the uninitiated took a second glance.

"We have talked so much about the Heath family, (*Those Irresistible Heaths*, A. R. G. S. *Bulletin*, October, 1960), that it would be sheer redundancy to say any more about the ericaceous plants in our garden. *Pernettya nana*, *P. tasmanica*, *Tsusiophyllum tanakae*, several cassiopes, *Kalmia polifolia* var. *microphylla*, *Gaul-*

theria trichophylla, *G. tetramera* and *G. semi-infera* have joined the ranks since then. I think the gaultherias are still our favorites—except for the shortias, the cyclamen, *Cornus canadensis*, the brambles, (*Rubus pedatus*, *R. lasiococcus* and the two from New Zealand, *R. parvus* and *R. australis*), the penstemons, (particularly those natural hybrids of *P. rupicola* and *P. fruticosus*), *Cotoneaster dammeri*, the acenas and the other groundcovers, without which our garden would be very bare.

"And then there are the rhododendrons. It would take several volumes to list their charms. Page likes any rhododendron, as long as it is yellow, so I repeatedly order seeds of anything from cream to orange. This year one lone truss on a *R. campylocarpum* seedling sent us into ecstasy, even though it showed little relationship to its supposed parent and the other ancestor is still unknown. We seem to have poor luck in getting true species rhododendrons from seed, but we delight in the mongrels as well as the purebreds. This is one reason why we insist that we are not gardeners. We just like to grow woody plants from seeds, from cuttings, from layerings, and we love them all.

"*Rhododendron cinnabarinum* var. *roylei* is especially beloved this year—it bloomed for the first time since the disastrous winter of 1955 and brought us our first blue ribbon. Its deeply-colored blooms against the blue-green of the foliage, repeating the rosy tones of the young branches, make it a focal point in any garden.

"You mentioned our rocky pool—designated as "Pat's Folly" by the Master of Funnybrook. I loved its temporary status. Page's dire predictions came true and a deer *did* put its hoof through the plastic liner. Now it is in the process of becoming a permanent garden attraction. Steve Doonan, whom so many of you know, dismantled it, brought in more rocks, extended the lower pool into a streamlet and a third pool, and put in a circulating pump. It looks rather raw at the moment but by next summer we hope to have a drift of shortias below *Rhododendron timetum*, with other groundcovers, mosses and ferns carpeting the banks.

"Page says most of the gardening at Funnybrook is strictly for the birds, and I would agree. We planted our *Mahonia aquifolium* hedge about ten years ago and it now averages ten feet in height and tempts countless birds to feast just outside our livingroom windows. Louis Bromfield's experience with *Rosa multiflora* led us to send east for several hundred plants and our "living fence" feeds and shelters varied thrush, western bluebirds, purple finches, cedar waxwings, ring-necked pheasants and many other birds during the winter months.

"The disgracefully lush mountain of Himalaya blackberries can hardly be called a garden asset, but thus far I have prevailed upon Page to leave it alone and the dividends of feathered migrants and permanent inhabitants have made it worthwhile.

"*Garrya elliptica*, staminate form, is now above the eaves of the house and, when it bloomed for the first time since the 1955 freeze, its pollen brought forth fruit on its neighbor, *G. fremontii*. This year's crop of almost three pounds of fruit clusters were gathered for the Arboretum. We hope some of its progeny have the beauty of *G. elliptica's* catkins and the hardiness of its maternal parent.

"As for the privilege of being "at home" to the Northwest Unit of the American Rock Garden Society—what could be more fun? The members are perfect garden tourists. They are just as crazy as we—and on the same subjects."

These three accounts will give an idea of what fun we had. Our sincere thanks go to these members who not only opened their gardens to us, but told about them so that all *Bulletin* readers could enjoy them.

SOME PATAGONIAN PLANTS

L. CHRISTINA BOYD-HARVEY, *Dirleton, East Lothian, Scotland*

(*Editor's Note*). Mrs. Boyd-Harvey, in a letter to Dr. Worth, described some of the plants that had been introduced from Patagonia recently by Ruth Tweedie, who is a neighbor of the writer. We have Dr. Worth to thank for his thoughtfulness in sharing these notes with Bulletin readers.

Now I must tell you something about the Patagonians, and perhaps you may like to extract notes for your Bulletin which may be of interest to those of your members who are also growing the plants.

Oxalis laciniata—(R. H. S. Award of Merit 1960) has leaves which are interesting in form and silvery in colour, delicately outlined with crimson along their wavy margins. The flowers are large for the size of the plant and may vary in colour from pale lilac veined in a deeper mauve, through campanula blue, to a rich glossy purple. They are deliciously perfumed, and this scent too has nuances from plant to plant, varying with the colour of the corolla. This beauty of colour, form and scent is made more valuable by a protracted flowering period and a good-tempered tolerance of garden conditions. It appears to do best in a rich but very porous mixture, in which the rhizomes can run about freely.

In October when the plants are dormant they should be split up and re-planted over a larger area. Any which are grown in pots must be turned out and broken up into more pots. If overcrowded in a pot which is too small, there will be a perfect forest of leaves, all growing too tall through competing for light.

Besides being easy to increase vegetatively, *Oxalis laciniata* comes very freely from fresh seed,—if you can catch it! The ripeness of the seed is not indicated by the capsule turning brown, but the right moment for harvesting is indicated by the capsule becoming erect from its previous nodding position. Examine the plants before breakfast and snip off all erect capsules into a glass jar. It is entertaining to watch first the capsule and then the translucent testa exploding. Some of the seeds may jump out of the jar, and then you will have *Oxalis laciniata* growing in the path,—just like *Corydalis cashmeriana* at Keillour Castle!

Symphystemon lyckholmii is an exquisite small relative of the well-known *Symphystemon biflorus* (*Sisyrinchium odoratissimum*). It is only 3 to 4 inches tall, but the flowers are large and of a subtle shade of terra-cotta, rather like a flower pot but of a satin texture. Mrs. Tweedie found it growing in very rough scree overlying moist clay, but my plants were grown in a well-watered rich loam. I grew them almost accidentally from a few stray seeds which had found their way into a packet of *Sisyrinchium depauperatum*. Unfortunately they have set no seed, but a friend has kindly given me a capsule from his plants.

Senecio caudicans—Mrs. Tweedie found this growing on the shores of the Straits of Magellan. When I first grew it, I dismissed it as handsome but coarse, but I now realize that it is one of the most spectacular plants I have. The largest leaf I can find is 7 inches long and 5½ inches broad on a 7 inch petiole. It is covered with white closely pressed wool, which is particularly dense on the reverse side, where no trace of green shows through. The flowers are like the common groundsel, magnified to gigantic proportions. It has its enemies—slugs at-

tack it in the seedling stage, sparrows tear off large lumps of leaf to make blankets for their nests, human visitors cannot resist fingering it to find out whether the woolliness will rub off (and it does), then late in the year it is attacked by rust disease (which the mycologist at the Royal Botanic Garden describes as "very beautiful"!) In spite of all this, I would be heart-broken to lose so majestic a plant.

Perezia recurvata—I was becoming impatient with this plant. The seeds were sown in 1958, but the plants did no more than form loose cushions of a rich dark green. In May one plant became covered with flower buds which opened in June to reveal nothing but tawny brown pappus. Another cleistogamous creature, like the violas? A fortnight later each brown head protruded one strap-shaped blue floret, and then gradually each capitulum filled with these to form a very nice double daisy. In colour they are rather better than *Aster pappi* but not so good as *Felicia bergeriana*.

Verbena tridens—I am glad to say that this is completely hardy although it has the reputation for being a "border-line plant". I have it in several positions in the garden; one specimen is planted opposite a wind funnel to the north, and that is the only one which has flowered. The corolla is palest pink and sweetly scented. Like *Fabiana* and the whipcord hebes, *Verbena tridens* has the dark, hard appearance of a conifer, until it bursts forth into flower.

Calceolaria darwinii—This of course has been in cultivation for many years, but has never become "everybody's plant". The forms collected by Mrs. Tweedie are very much wider in the pouch than those usually seen, and there is much variation in the spotting at the base, and the stripes in the throat. Some plants are very hairy and others develop a dusting of farina when heavy rain follows a period of drought. I find that it is best to sow seed in position in the garden. Mine are growing in a John Innes mixture which was top-dressed with whin chippings before the seeds were sown. It is most essential to give them some shade. My plants were doing well until a bush of *Convolvulus cneorum* near them was killed by frost. However I have one very splendid plant nestling at the base of a rock on its northwest side. Until this year I have never gathered seed. I have never seen insects visiting the flowers so this year I have cross pollinated with a brush, using pollen from 1958 plants (when there was a dry season in Mrs. Tweedie's part of Patagonia) on 1961 stigmas (when it rained continually throughout her visit there).

A NOTE ON SUCCULENTS

R. GINNS, *Desborough, Northants, England*

I was interested in Mr. Uttal's notes on southern rock gardens as they bring to a head thoughts I have had since visiting South Africa recently. We must, I suppose, differentiate between alpine and rock plants. Whilst few of the former will flourish in hot climates there are plenty of species that live among rocks in temperate countries and that look perfectly at home on a rock garden.

Prominent among these is the vast tribe of succulent plants. Members of the English Alpine Garden Society look askance at me when I suggest making use of some of these, but I always come back at them by mentioning sempervivums, classes for which, at shows, are always well filled. These should do well in the southern states as they can stand any amount of baking. Amongst the many hybrids are some wonderful plants, in shades of green, mahogany and crimson with varying amounts of white hairs. Along with these can be mentioned *Umbilicus*, *Rosularia* and *Orostachys*. From these it is only a step to the larger, but more tender, rosettes of the American *Echeveria*, *Pachyphytum*, *Dudleya*

and related genera. The late Dr. Giuseppe took prizes at alpine shows in London with a beautiful specimen of *Dudleya anthonyi*, white as snow. A collection of these plants in one of my houses provides a kaleidoscope of colour, including every colour of the rainbow, besides beautiful pastel shades of mauve and pink. *Echeveria affinis* is so deep a mahogany as to be almost black, whilst *E. hoveri* displays more white than pink or sea-green. A hot bank planted with these in a frost-free area should be a striking spectacle.

Mr. Uttal mentions hard freezing and then suggests growing stapelias. I should not have thought that these could stand freezing, but if so there must be thousands of species of South African succulents that can be added to his list of plants worth trying.

The lower slopes of dry mountains in Cape Province are, in places, natural rock gardens planted with succulents. One slope I have in mind was dominated by aloes, whilst between the boulders were *Cotyledon orbiculata*, bushes of *Crasula arborescens* and a veritable tangle of dwarfer growing crassulas, succulent stemmed pelargoniums, the daisy flowered othonnas, and a bewildering variety of multicoloured shrubby *Mesembryanthemaceae* in a number of genera. Elsewhere I found the tongue-shaped leaves and tall scapes of pink, green-tipped flowers of *Gasteria* and the pearl-studded rosettes of *Haworthia margaritifera*. All looked perfectly at home among the rocks. To crown my day, at the top of a low range of slaty hills, where the rock had split into vertical crevices, I found many of the cracks filled with the little buttons of *Conophytum odorum* which were colonizing in the same way that saxatile saxifrages do in rock crevices in Europe.

This is, of course, only touching on the fringe of the subject, to which a letter is quite incapable of doing justice. Still, members in the southern states would do well to pay attention to these South African plants.

MOUNT ADAMS — THAT BASHFUL CASCADIAN ALP

ARTHUR R. KRUCKEBERG, *Seattle, Washington*

Residents along the Vancouver Strip will assure you that it is an elusive mountain. Of those few eruptive latecomers along the backbone of the Cascade mountain axis, Mount Adams ever seems to be hiding from view. The icy cones of Hood, Rainier, St. Helens, all conspire to screen their lofty volcanic sister. But once you cross the Columbia at Hood River and begin the ever-ascending drive from White Salmon and through the hamlet of Trout Lake, you gaze northward time after time at Adams—enlarging at each new vista until its glacier-gilded broad summit becomes overpowering. There is no other mountainous eminence to detract from Adams' 12,307 feet of ice, snow, and lava rock, once you are in the heart of the Gifford Pinchot National Forest.

Just north of Trout Lake, pavement is abandoned and a good dirt road begins its serpentine way into the forest. The alpine plant hunter impatiently urges his vehicle through the miles of forest corridor, at first lined with lofty yellow pine, then through the sombre monotony of a matchstick forest of lodgepole pine, then finally a series of precipitous pitches puts him on the complex of precarious benches that make up Bird Creek Meadow—the end of the road. That word "precarious" has real meaning for Justice William O. Douglas. Just begin reading in his *My Wilderness* on page 89, where he sadly recounts the inevitable changes that roads bring to the high country. Bird Creek Meadows is now open to all who drive; the camper invasion is usually a week-end and holiday affair, so there are ways to beat the crowd.



A. R. Kruckeberg

Hulsea nana on Mount Adams



A. R. Kruckeberg

Aster alpigenus

We arrived at Bird Creek Meadows on Thursday before Labor Day this year and at first had it nearly all to ourselves. By Saturday, though, we were ready to give up, even though there was much left to explore. Encircled by campers, dogs, and transistor radios, we ached for the tranquility of our four acres at home. But in those three days, we saw much of the southeast slope of Mt. Adams.

Plants of the rock-garden ilk abound at Bird Creek Meadows. The meadows are intricately dissected with ridges and outcrops of lava rock and high dry benches of a pumicelike sand. On leaving the campground for the Mazama Glacier approach to the summit, we passed across one such dry bench overlooking Hellroaring Creek. Though constantly distracted by the magnificent view of the mountain, we nosed around the pumice, scoria and sand finding a host of lovely alpiners. The tiny *Aster alpigenus*, with its acaulescent stalks bearing single, outsized lavender daisies, was a constant attraction. Two plants with wild buckwheat affinity also caught the eye of us who seek the green cushions and other vegetable dwarfs: *Eriogonum pyrolaefolium* var. *coryphaeum*, with bright green spoons for leaves, and off-white blooms often grows with *Polygonum newberryi*, a glaucous succulent thing with scattered diminutive flowers and the most elephantine root. *Spraguea umbellata*, *Arnica latifolia*, *Luetkea pectinata*, hosts of alpine lupin, (*L. lyallii* and *L. polyphyllus* var.), *Erigeron peregrinus*, and *Penstemon euglaucus* fill the eye at every turn. A too preoccupied botanist might back right off the upper edge of this subalpine sward, for at this point a deep and rugged canyon abruptly dominates the topography. Cascading down from the jagged tongues of Mazama Glacier come the icy waters of Hellroaring Creek. One cannot help but think of Skamania County's prince of botanists and his

personal gazetteer for places around Mt. Adams. Wilhelm Suksdorf, germanic to the core, wrote his botanical papers in German and saw Nordic mythology re-enacted on the slopes of this New World mountain. Hellroaring Creek he called Wodanthal (Wodan's Vale) and the red volcanic cone (Little Mt. Adams) on the southeast slope of the mountain was Rotkegel (Red Cone).

Leaving the precipice overlooking Wodanthal, we followed the escarpment up towards the lateral moraine bordering Mazama Glacier. Even in late August, the flora offered a generous bounty of color. Through open, stunted subalpine fir (*Abies lasiocarpa*) and mountain hemlock (*Tsuga mertensiana*), the trail showed us an unending array of castillejas, penstemons, arnicas, lupins, and pedicularis. Near timberline, we left the fir and hemlock to begin walking through the finest whitebark pine "krummholz" we have seen in the Cascades. *Pinus albicaulis* at this elevation is not more than ten feet high, their tops windswept and trunks grotesquely gnarled. In some places the "krummholz" effect is so continuous as to make an arborlike roof over the gentler slopes. These "tents" of pine provide shelter for polemoniums, lupins, and phacelias—and for the hungry hiker ready for lunch.

At the base of the Mazama moraine, came the prize find of the day. Hundreds of plants of that dazzling golden composite, *Hulsea nana*. Its sticky, finely divided leaves formed the rosetted backdrop for as many as 15 or so glossy, golden-yellow heads the size of a four-bit piece. Hardly less spectacular on this slope of volcano-and-ice-tossed rubble were such alpiners as *Smelowskia calycina*, *Collomia debilis*, *Erigeron compositus*, *Erysimum torulosum*, and *Phacelia sericea*. Nature had generously extended flowering time for many of these, so that the early-blooming individuals were ready to offer us their seed, while the later ones posed for photos. A good haul was made on this slope, all the while its human trespassers remembering that seed and photos taken on the spot would least alter the delicate balance between life and death in the fragile alpine habitat.

A BOTANIST'S PARADISE

GLADYS DANIELS, *Seattle, Washington*

SWAT IS A PARADISE for a botanist — not only because of its gorgeous flora, but because it has never been properly studied by botanists. There is always a possibility of finding something new and different just around the corner. Little has been written of Swat's flora so there is plenty of botanical pioneering yet to be done there.

Swat is a small state of West Pakistan. Situated in the Himalayas, it has rivers, valleys and snow-capped peaks. The highest peak, eighteen thousand feet in elevation, is called Khush Anjan. At the beginning of the Christian era, the valley of the Swat was called the garden valley and was sacred to the Buddhist religion. It is said that convents and monasteries were so near each other that the temple bells could be heard from one to the other. The saffron robed priests must have numbered in the thousands. Now the ruins of the temples extend all the way up the valley, ruins that are merely outlines of stone. There are also many stupas, or shrines, the enclosed relics of which have been vandalized long ago. Treasure in bits of carved stone and perhaps a coin or two may be found. Some of the carved rock is still in place. The stupas are large, some at least one hundred feet in diameter.

Swat has only been accessible to the ordinary visitor for a few years. Even now a permit is necessary. Not so many years ago Swat was a fierce tribal area.

Finally a powerful ruler appeared who by devious and mysterious means united the tribes. Then under his grandson, Abdul Wadood, the State of Swat was formed. He became the first Wali e Swat — and his son, Abdul Haz Jahan Zeb, is the present ruler. He is a man of great ability and understanding, and has inaugurated much needed reform.

Entry is now gained with ease. It is necessary, however, to stay on the main road. I, for one, would not care to venture into the hills without adequate protection. I think the Wali e Swat would do all he could to make it easy and safe for a small expedition, or even for one person to collect specimens there.

Dr. Ralph N. Stewart, formerly President of Gordon College at Rawalpindi, told me of the flora of Swat and that in some ways it was the most interesting he had encountered. April, he said, would be the best month to go as the spring flowers are exquisite at that time. He told me that if I could go, he and his wife would join me, and that he would secure the permit. I was in luck. Dr. Stewart is an internationally known botanist and an authority on Asian flora. It is sometimes easy to place a plant in a family and even determine the genus, but for the species name a reliable source is necessary. I will always be grateful to Dr. Stewart for his help. Not only is he an able botanist, but he and his wife are wonderful companions.

We went over the Malakand Pass on a dazzling clear day. It was a narrow, winding road. Probably it was built with small cars in mind, not the states-side touring car I was driving. As we turned the last corner what a breath taking view there was! A lush green valley lay before us with the Swat River a blue ribbon on its floor. In the distance, tier on tier, rose the snow capped peaks of the Himalayas. Along the winding road were a few tiny villages and small forts with heavy watch towers. We could see down below, fields of mustard in full bloom, and here and there plots of opium poppies.

The fields were full of bright red poppies, *Papaver pavoninum*, blowing in the breeze. Among the poppies we could see deep blue *Ixiolirion tataricum*. On either side of the road were flowers of all colors, two iris, a tall purple one with a tiny blossom, *Iris sisyrinchium*, and a low yellow one having a large flower, *Iris falcifolia*. There were patches of dainty lacelike *Scilla hohenackeri* and star tulips in profusion. April was truly wonderful in Swat.

At the lower levels the original vegetation has nearly disappeared, probably for firewood and so that goats and sheep could graze. The small graveyards are full of wild olive trees and an occasional holly oak. On the olive a tiny mistletoe had found a home. Along the river were patches of marijuana. I expect the Swatics knew what its medicinal properties were. The absence of doctors has caused the isolated tribes, as well as the nomads, the Gujars, to learn the various plants that can be used as medicines. They probably employed the trial and error method, but they certainly have a fund of useful information.

There were several mints with purple blossoms that looked like heather among the rocks. One small nepeta, fragrant and with a large root, looked like a carrot and was *Nepeta raphanorhiza*. In one place, marching up the hillside to the ancient wall, was *Eremostachys superba*, bright yellow and tall as a delphinium. A Swati on the road was carrying a great bundle of bright red rhododendron, *Rhododendron arboreum*. It reached to the ground and we found later that enclosed within the wrapping was a cake of ice from some high lake and that it was intended for the hotel at Saidu Sharif. The day was closing so we hurried on to Saidu Sharif, the capital and the only city of Swat. The hotel was a surprise, small, well kept, with beautiful gardens and a lawn. A great white mosque was near by. Swat is now a Moslem state.

Next morning we went on a shopping trip. Hand woven wool blankets with bright borders and nicely embroidered vests were well worth taking home. I bought honey which is excellent there. Don't make the mistake of buying honey in a tin can. The vendors can't resist the opportunity of playing a little oriental trick. In the tin cans the honey can be diluted without detection, but in the glass jars it is thick and golden.

After shopping we went up one of the side valleys. Saidu Sharif is 3,000 feet and as a rock garden enthusiast, I wanted to get into the alpine area. On the way we saw lovely shrubs, *Indigofera pulchella* with dainty lavender blossoms. Also *Sophora mollis*—deep yellow—and *Caryopteris wallichiana* with long blue spikes were seen. We found the rare lily, *Notholirion (Lilium) thomsonianum*, a long spike of large pale lavender blooms. We never did get into the deodar forest, nor did we see the three varieties of pine, as these have been used long ago for one purpose or another.

As we reached higher elevations we found some wonderful rock plants. One of the most beautiful I have ever seen was found on ledges and in crevices, *Incarvillea (Amphicome) emodi* with dainty fernlike pinnate leaves and covered with large tubular salmon pink flowers with yellow throats. High on the rocks was *Onosma thomsonii* with pubescence so thick it was like a white fur. It had deep orange flowers fringed with brown. Another was a lovely flower called basant. Its real name is *Reinwardtia trigyna*, a shrubby vinelike plant with large deep yellow buttercup-shaped flowers.

One could spend much time in the valleys and mountains of Swat and no doubt find many new and interesting plants. No botanist that I have heard of has been on the Indus side toward Dir, an adjacent state.

What greater reward would one want in life than to be a part of a collecting trip to Swat? What shape and color is the narcissus that blooms there on the hills in January? That and so many questions were left unanswered on my short and unforgettable trip in April to the beautiful state of Swat.

JEWELS OF CENTRAL OREGON

NEILL D. HALL, *Seattle, Washington*

At the completion of the sessions of the American Institute of Biological Sciences at Corvallis, Oregon, a group of over thirty people formed a caravan. The leader, Dr. William Baker, of the University of Idaho, distributed box lunches and we were ready to start a three day botanizing trip covering the Fairview and Bohemia Mountain areas and the rim of Crater Lake.

A short distance out of Cottage Grove we traded the paved highway for a forest service road. Our first stop was a forest service campground. This was in the humid transition plant zone with large trees and lush undergrowth. As soon as the group finished their lunches they started botanizing the margin of a small mountain stream. On the steep bank of this creek *Adiantum pedatum* var. *aleuticum* formed huge drifts of fronds over two feet high. There was ample moisture and the fronds of this western maidenhair fern were fully a foot across. Small colonies of *Polypodium glycyrrhiza*, the licorice fern, were growing on the trunks of the deciduous trees and of course the common western sword fern, *Polystichum munitum* and the lady fern, *Athyrium filix-femina* were plentiful in the rich soil of the forest floor.

The few things of special interest at this location did not prepare us for the wealth of material higher up. The group drove on up steep grades, each eating the

dust of the car ahead. We finally reached a ridge of the range at about 5,000 feet elevation. This was our principal objective for the day. Within a few feet of the cars we were in a plant paradise.

One of the first plants to attract my eye was *Cheilanthes gracillima*, the lace fern, growing in the crevices of the rocks in a fully exposed situation. This little fern is gray-green in color and about four inches high. In these same rock outcrops, *Sedum spathulifolium*, the broad-leaved stone crop was a beautiful gray, tinted shades of red by the sun. *Sedum oregonense*, the creamy stone crop, appeared as drops of green liquid that had solidified into succulent beads. These were also tinted red by the sun. Interspersed among these plants were cushions of *Phlox diffusa* with a few flowers still brightening the cushions.

Some of the more ambitious male members of the group spotted a large talus slope and soon we were up on it. The lower portion was active and sparse in plant material and required care to avoid a bad fall. But as we came closer to the live rock at the top a little more soil in the scree and a more stable slope produced many choice plants. Of course, most things were out of bloom at this season and seed had not yet ripened.

One of the first unusual plants to catch our attention was *Lilium washingtonianum*. This is the Cascade or Mt. Hood lily. It has a blossom that opens white with small burgundy red spots and as it ages, the whole flower takes on the burgundy red cast. Associated with the lilies were many fine clumps of *Polystichum lonchitis*, commonly called the holly fern. These ferns were the finest examples of this species I have ever found. The fronds were a dark lustrous green that indicated the richness of the scree. The spores were just right for collecting so they will be offered in the American Fern Society spore exchange. By this time you have probably pegged this article as a fern field trip report and you are correct. The trip was sponsored by the American Fern Society.

Above the scree we found *Polypodium hesperium*, the mountain licorice fern, growing in vertical crevices in the live rock. There fronds were only about two inches tall. Associated with them were brittle or bladder ferns, *Cystopteris fragilis*.

On some of the more horizontal faces of the rock the crevices had nice mats of *Penstemon rupicola*. This plant has beautiful gray-green foliage and I call the flowers cerise red but others describe it as crimson. We saw this in the last stages of bloom the next day at about 3,000 feet higher elevation. These same rock faces also had nice mats of the two sedums we had noted before. All of these plants, plus an endless variety of lichens on the rock faces formed a tapestry of nature that was hard to believe.

As we prepared to work our way down the scree, we saw still another fern. This was the little parsley fern, *Cryptogramma acrostichoides*. The sheltered stretch of trail on the way back to our cars produced *Gaultheria ovatifolia*, trailing close to the ground with evergreen leaves and scarlet berries. In this same area were various species of dwarf vaccinium with berries of red and blue. These were ripe and tasty.

Part of the group went on to a fire lookout still higher on the mountain but I was afraid I would lose my brakes due to the long steep grades, so I headed out using low gear and my brakes as little as possible.

The following day we drove to Crater Lake. After a quick lunch at the rim a number of the party set out for the top of Garfield Peak. This represented a climb of a thousand feet and a hike of several miles, with changing views of the lake all the way to the top.

The meadows at the lower part of the trail produced a great many

eriogonums, polygonums and various composites with occasional stands of beautiful alpine trees. The alpine fir, *Abies lasiocarpa* was at its best with its narrow spire high above us and accented with its candelabra of cones at the extreme tip. A neighbor of the fir was the mountain hemlock, *Tsuga mertensiana*. The gray-green needles with their star-like manner of growth make this tree a thing of great beauty.

As we continued to climb, we came upon a clump of white bark pines, *Pinus albicaulis*. Up in the upper branches we saw a Clark's nutcracker hard at work tearing the plum colored cones apart to reach the seeds. These pines are a beautiful feature of the high ridges where the wind fashions them into contorted shapes. The clean gray-white bark of the adult tree accent nature's work of sculptury.

The park trail builders have erected retaining walls of natural rock beside the trail on the uphill side. It was in these walls that we began to find choice ferns, such as *Cheilanthes siliquosa*. This little gray gem apparently demands crevices in vertical walls where the drainage is perfect. A near neighbor was *Polystichum scopulinum*, which is the alpine sword fern. This fern would be ideal for a vertical pocket in a rock garden. *Polystichum lonchitis* and *Cryptogramma acrostichoides* were both found growing in the wall, whereas earlier we found them in the scree.

Anemone (Pulsatilla) occidentalis, the western windflower or pasque flower, was growing on the steep rock slope above the rock wall. Its silky seed heads shone in the sunlight as we looked up through them at the blue sky. There was a great deal of pumice on these slopes and it was there we found large mats of *Ceanothus prostratus* hugging the ground. These thrive in the perfect drainage and really form a picture with their little gray-green holly-like leaves. Of course, most of these plants were out of bloom at this elevation but as we climbed higher more and more and more flowers were to be seen.

A sheltered rock pocket disclosed another fern. This, at first glance appeared to be another *Cystopteris fragilis* but when we looked closer it proved to be entirely different. This was apparently *Woodsia scopulina*. The fronds were about six inches long, bearing both hairs and tiny glands. This appears to be a new species in the park.

A very interesting low-growing shrub was *Castanopsis sempervirens*, the Sierra chinquapin. This shrub would be very attractive for a well drained, exposed situation, especially if it set its golden, spiny chestnut-like burs in cultivation.

We were now on the rim looking nearly straight down into the depths of the lake. We were well over 1,500 feet above the surface of the lake and the various tones of blue, depending on the reflections of the sky and the depth of the water, are beyond my ability to describe. From this point on, we were nearly always within sight of the lake.

Cushions of *Phlox douglasii* still showed enough of their white to lavender flowers to give us an idea of their beauty when they were in full bloom. Lupins were with us from relatively low levels where large herbaceous species painted the countryside. High up on the rim we were treated to the sight of *Lupinus lyallii*. This little fellow was only a couple of inches high with a dense cluster of blue flowers. It seemed to be growing in a bed of pure pumice. The crevices in the rock were decorated with *Penstemon menziesii davidsonii*. These prostrate evergreen mats were covered with their rosy-purple flowers and were at their best at the crest of Garfield Peak.

The view from this point was magnificent as we were at 8,000 feet elevation and 1,900 feet above the lake. Phantom Ship, the pinnacle-tipped rocky islet

seemed close at hand. Deer could be seen grazing peacefully in a meadow far below us. Looking east, the view was diffused by the distance as we looked down on the Klamath Lake area miles away.

Early next morning we drove to Llao Rock where we again climbed to the rim overlooking the lake. Our objective was to locate a minute grape-fern. *Botrychium pumicola* was found growing in pumice gravel on a completely exposed slope. All of the party dropped to their hands and knees to look for this one or two inch fern. Even the color of the fronds helped to camouflage this fern for it blended with the buff color of the pumice. Finding this very rare fern marked the end of a very enjoyable three day trip and our group soon broke up to return to homes throughout the United States.

PLANT COLLECTING IN THE GASPÉ, QUEBEC

WILLIAM J. R. ADAMSEN, *Ossining, N. Y.*

In the spring of 1961 a decision was reached to collect alpine seeds and plants in the Gaspé section of the Providence of Quebec, Canada. This was to involve an auto trip of some 2,500 miles for a period of about two weeks. Once the proposed trip was mentioned within earshot of two long standing fisherman friends, withdrawal was impossible. The Gaspé region is known as one of the finest fishing areas in eastern North America.

Appropriate reference to H. J. Scoggan's *Flora of Bic and the Gaspé Peninsula, Quebec* (Bull. #115, Biolog. Series 39, National Museum of Canada, Ottawa, pp. 399, ill. 14, map, price \$1.) showed approximately where to go for certain species. Since some of the collecting was to be done in the Shick-Shock mountain range, located in the National Gaspesian Park in the interior, a collecting permit was required. Permission was received from the Superintendent of Chasses et de la Peche, Monsieur F. de B. Goudreau to collect with "restraint" in the forbidden areas. Additional permission to bring the plants into the United States after prior inspection by Canadian authorities, was received from the Plant Import section of the United States Department of Agriculture at 209 River St., Hoboken, N. Y.

We left early Monday morning, August 8th, and covered 600 miles the first day. That night we camped at Aroostook State Park, Presque Isle, Maine. The following day we crossed the border into the Gaspé Peninsula and proceeded along the south shore bordering Chaleur Bay. Few of the inhabitants there speak English but a combination of hand signals, grunts and pidgin French will serve well. The first two are probably adequate. Everyone we met was most desirous to help. Nowhere did we find any attempt to gouge the tourist.

As we proceeded along the coast, reference to an oil company map disclosed an inland "fishing" camp supposedly about 15 miles inland, which appeared as possibly ideal for the combination of fishing and plant hunting. Fortunately we did not go there, for later the camp was discovered to be about 60 miles inland, an indication as to the reliability of some maps.

At the point on the coast where the River St. Bonaventure cuts the coast highway, it is possible to take a dirt road inland. Some five miles in, where the road crosses the river by means of a covered bridge, there is a good plant hunting ground without the rigors and hardships of a mountain hike. It is impossible to say in any one year precisely what will be found here since the heavy spring flood forces the rocks downward in a moving scree. I did find a number of beautiful silvery mats of *Dryas drummondii*. There were also a number of salix species,

Anemone caroliniana and *Prunus pumila* var. *depressa*. A lovely aster was also noted. In the hard conditions of the river bed it was dwarf, but whether it would retain its genteel characteristics under garden conditions is doubtful.

Wednesday, we camped just west of Percé. Despite its "resort" qualities, Percé is an excellent area of many fine plants. These are somewhat more difficult of access than those of the river gravels but still much more easily acquired than are those through mountain climbing. As I reflect on the trip, my regret is that I did not search this area more thoroughly.

It is possible to walk along the beach at low tide without danger and to reach an area of splendid plants among the sea cliffs. The rock here is of a curious kind, looking like a natural concrete with round stones in it. According to a simple geology book in my possession it may be conglomerate. On these Percé bluffs I secured *Saxifraga aizoon*, *S. aizoides*, *Pinguicula vulgaris* (subsequently mislaid) *Primula laurentiana* and some astragalus.

Thursday, some one hundred miles northwestward along the coast bordering the mouth of the St. Lawrence River, we climbed Mont St. Pierre near the village of the same name. We were led up the narrow, hidden trail by some local twelve year olds. This sea mountain is alpine in quality, exposed to a northeast gale from the sea a good portion of the year. Although the "mountain" is probably not more than a thousand feet above sea level, it is a stiff (and hot) climb, when led by young lads. The rock is a decomposed slate with the fissures running almost vertically. Just as in most alpine areas the soil is wet and the plant roots run deep into the cracked slate. According to Scoggan the pH is 8 or heavily on the alkaline side. The plants found there are *Elaeagnus commutata*, *Shepherdia canadensis*, *Erigeron compositus*, *Campanula rotundifolia* and several species of oxytropis and astragalus. Other plants noted were a dwarf goldenrod and a not so dwarf salix. There were doubtless many other fine plants about, but again the search was probably too hurried.

On Friday we proceeded into the Gaspesian National Park, the intention being to work toward Mt. Jacques Cartier, highest peak in eastern Canada, from the coastal village of Rivière St. Claude via Lac Claude. Unfortunately the official maps were wrong, and the roads shown on the map were no longer useable even by a jeep, or perhaps, never existed. The mountain was inaccessible from Lac Claude except by walking eight miles each way with a guide. However, we stayed one day at this idyllic lake, altitude 2,500 feet. We were the sole persons at the lake with the exception of the fire guard. Because of a miserable cold damp mist interspersed with outright rain we elected to stay in the "cabine" at a cost of \$4.00 each. It was well worth it for the panelled and well insulated "cabine" was very clean and cheerful and was equipped with a gas refrigerator and a wood-burning stove and there were two bedrooms. At this place we were at least 20 miles, over very rough roads, away from other persons. Anyone wishing to stay at Lac Claude should make reservations.

The area around the camp was sub-alpine. *Linnæa borealis* grew everywhere, even in the open. *Chiogenes hispidula* hung over rotted logs on the edges of the road as did *Cornus canadensis*. *Abies balsamea* was everywhere, too, and where the area had been burned over or logged off, there were the usual patches of *Epilobium latifolium*. Near the cabin in the direction of the lake was a large patch of *Ledum groenlandicum*. I had hoped to locate *Calypso bulbosa* in the cedar swamps but was not able to find it.

In order to reach Mont Jacques Cartier it was necessary to return to Mont St. Pierre. However, since it was now Sunday, the guarded gate at the park entrance was closed and we had to locate the gatekeeper. The road to the moun-

tain top is about 25 miles long, is rough and even dangerous, judging from the undercut washouts here and there. This "auto" road ends at a camping facility (no fire guard—you are on your own), and from there continues as a jeep road right to the top of the mountain. This road was, no doubt, built during World War II by the Canadian army as access to an observation post. I do not see how a jeep can make the trip, but there is a government jeep that does it almost every day during the summer season at the rate of some \$15.00 per head. The distance from the camp to the mountain top is about five miles one way, but about two of these miles can be managed by auto if one does not mind a cracked oil pan, a broken spring or two, a dented gas tank, a broken muffler and the possibility of having to walk a long way back.

We tented at the extremity of the "autoroad", about two miles from the camp. Our location was on a slightly widened portion of the road on an exposed bluff. The following morning I was really surprised that the tent was still standing, the wind had been so fierce. Looking up toward the summit, we could see clouds racing by, obscuring the top, and then shortly after we would be drenched by a cold mist-like rain. Despite these weather conditions, we headed up to the top on foot, a long three miles.

The first indication of truly alpine plants was when we found a single large rock covered by *Empetrum nigrum*, *Salix* and *Loiseleuria procumbens*. By now the weather was foul. A strong wind of some thirty or forty miles per hour blew a cold mist into our faces and the temperature was uncomfortable at near forty degrees. As we climbed a dwarf betula appeared, probably *Betula glandulosa*. Growing in thick sphagnum by the roadside were what we thought was *Rubus chamaemorus* and *Kalmia polifolia*. Gradually *Diapensia lapponica* appeared and towards the summit became almost the only plant. *Rhododendron lapponicum* was also fairly frequent at the higher levels.

There is a fire guard at the top who keeps a lonely vigil over this area. Incidentally, he is the father of the guard at Lac Claude. His only companions are the caribou that graze the moss on the mountain as they do the tundra to the north. The guard told us that five Canadian botanists had combed the mountain two weeks earlier, having spent five days there. There is a rugged cabin available on the summit, a relic of the war days, which may be had for a dollar per person. If one came prepared with the right equipment, came by government jeep and with the necessary permits, one could spend a very profitable time in this spot. But the weather is unpredictable and one should be well equipped for a period of beastly weather, even snow.

The next step was to have the specimens inspected in Quebec (at the old Post Office), for entry into the United States. At the time it was quite a bother, but as I look back, or as I see some of those specimens in the garden, then I feel it was great fun.

DWARF IRIS FOR ROCK GARDENS

WALTER WELCH, *Middlebury, Indiana*

IN READING OVER the bulletins of the various rock garden societies, I am particularly surprised and disappointed in not finding any mention of the dwarf bearded iris. Especially so when I find them so well adapted to rock gardens and so easily grown.

I realize that in the past they were neglected because of a highly restricted color range, just purples and yellows, and by the larger size, being of the

chamaeciris type of dwarfs. But apparently the rock gardeners have not become aware of the great changes occurring during the past few years. Since about 1950 we have extended this range to where we have most all colors and patterns now known in the tall bearded iris. In addition we have extended the season of bloom by about two weeks by introducing new and earlier blooming species. And further we now have a larger range of types and sizes of plants through the acquisition of new species hitherto not in cultivation in this country.

I will particularly recommend the forms of *Iris pumila* for rock gardens, not only for their profuseness of blooming but for the dainty plant characteristics. These plants grow to around four and a half inches in height, they quickly form a nice clump and at blooming time a small clump is a solid ball or bouquet of color. This is understandable when you consider that, unlike other iris which send up a single stalk from one rhizome, these little pumilas will have from three up to six or eight stalks as side growth from each rhizome and each stem with a terminal bud.

The variety of colors and patterns are almost unlimited; they run from black through the violets and purples to lavenders and orchid pinks to pure whites. There are brilliant yellows, lemons and creams. For instance 'White Mite' is a dainty form of pure and immaculate white; 'Atomic Blue' is a pure sky blue of beautiful form; 'Orchid Sheen' is a bright orchid pink; 'Greenie' is a true green bitone; 'Morning Fresh' is a neglecta with standards of sky blue, and falls with a darker blue pattern on them. 'Flashlight' has bright yellow standards, glistening gold falls; 'Hanselmayer' is a pale lemon self; 'Red Amethyst' is a maroon-red bitone; 'Spring Joy' is delightful with its lavender standards and reddish-purple falls, and white beard.

Immediately following and overlapping the pumila blooming come the various hybrid forms ranging from 6 to 8 inches tall. There is 'Cherry Red', an amoena, with white standards and cherry-red falls. 'Ablaze' is a bright orange with mahogany-red falls, a yellow border and brilliant orange beard. One can have a bright yellow with deep violet beard, making a unique combination, as in 'Blue Whiskers'. 'Fashion Lady' with its fine tailored shape and luminous yellow color makes an outstanding spot in the rock garden. And in 'Gay Lassie' we have a pinnacle type with white stands and deep yellow falls. 'Black Top' is really black and always draws comments. 'Blazon', 7 inches tall, is one of the finest in the maroon range of color.

Not only do these dwarfs give us bloom in early spring when bloom is always scarce, but after blooming they make a nice clump effect of green throughout the summer with their dainty sword-like leaves. They like full sunlight and good drainage for best performance. They are very effective planted against a rock for background and are thoroughly hardy in winter. They should be lifted and divided at about three year intervals as they increase rapidly in good soil.

Another popular way of handling dwarfs is as an edging in front of borders. Plant about a foot back of the grass line, each variety as a clump about a foot apart.

It has been said that every flower is popular in proportion to the activity of the hybridizers, with new varieties to whet the appetite. Certainly this has proven out with the dwarfs for many hybridizers are now working with them all over the country. Several new species are as yet practically unexplored for possibilities. For instance, *Iris mellita* is a delightful plant, unique with its sickle shape, prostrate leaves. *Iris arenaria* is another, with slender grass-like leaves, with two or three terminal buds which open at different times, forming waves of yellow color at intervals. The flowers are short lived, lasting but one day, however

they are soon followed by others over a two week period. This species has been crossed with other types of dwarfs to produce new kinds of hybrids, noted for their dainty proportions. 'Cup and Saucer' is of an anthocyanin pinkish color, five inches high and makes a bright pink spot in the garden. 'Glow Gleam' is a deep reddish form with deep orange beard. And we have 'Promise', which is on the salmon-pink order.

I am sure if you could see these early, tiny plants in bloom, you would become so captivated with them that you could not resist growing them in your rock garden and border plantings. Just as sedums are desirable for contrasting effects and variations in the plantings, these dwarfs will add distinction and attraction, especially effective as a foil for your predominately leafy plants.

REPORT OF THE NEW ENGLAND UNIT

MRS. HELEN GILBERT, *Danielson, Conn.*

The annual meeting of the New England Unit was held on May 20th, at the home of the Chairman, Mrs. Albert Hunkins, at Plaistow, N. H., with twenty present. After a tour of the lovely garden, a picnic lunch was enjoyed on the terrace overlooking the gardens with a typical New England hillside view for a backdrop.

The business meeting revealed a goodly balance in the treasury, and Mrs. Alfred Pease reported that all of the *Bulletins* have had good circulation. Mrs. Harold Stillwell reported three New England Robins flying, as well as an East-West Robin, which includes many New England members. The writer reported on the visit to the Alexander gardens at Middleboro, Mass., on May 12th, where there were many things of interest to gardeners, including a mist propagation layout, a shade house and phlox *subulata* hybrids.

The nominating committee, consisting of Mrs. Louis Davlin, Mrs. Melvin Apple and Mrs. Rose Bronson, Chairman, presented the following slate of officers, which was unanimously accepted:

Mrs. Albert Hunkins—Chairman

Mrs. Henry Gilbert—Vice Chairman

Mrs. Harold Stillwell—Secretary-Treasurer

Mrs. Alfred Pease, Mrs. Robert Emerson, Mrs. Sidney Baylor and Mr.

Lynn Ranger—Executive Committee

After the meeting, a plant sale was held that netted thirty dollars for the treasury. With Burr Bronson as auctioneer many fine plants changed hands.

A goodly number of members were present at Scarborough, Maine, on May 26th, when Mrs. Harry Hayward was our hostess. The beautifully grown plants and delightful garden there are always a pleasure to see. After basket lunches were enjoyed under the trees adjoining the garden, we were invited to visit the attractive garden of Mrs. Ralph Denham nearby, which concluded a truly enjoyable day.

Another delightful day was spent on July 8th at Stone Chimney Gardens, Reading, Vermont, with Mrs. Elizabeth Newton as hostess. In spite of Vermont's extended drought, there was much of interest to be seen and enjoyed. After a picnic lunch down by the pool, a short business meeting proved very helpful in preliminary planning for the fall program. The fall meeting will be held at Horticultural Hall, on October 20th, during the Fall Flower Show. Other tentative plans were made for future meetings. It was voted that the New England Unit would sponsor a life membership in the society for Mr. James Mitchell in appreciation for his contributions to all of us.

WELCOME! NEW MEMBERS

- Mr. Howard Bael, Choate Lane, Pleasantville, N. Y.
 Miss Caryl G. Beckwith, 222 Henry Street, Brooklyn 1, N. Y.
 Mr. & Mrs. Werner Bohn, 42 St. Leon St., Chateaguay Center, Quebec.
 Mrs. Helen D. Coupal, 31 Concord Road, Westford, Mass.
 Miss Frances Dunstan, 1671 La Loma Drive, Santa Ana, Calif.
 Mrs. Katherine L. Falco, 49 Cobb Street, Medford, Mass.
 Mrs. Harry S. Gorgas, 139 Euston Road, Garden City, N. Y.
 Mr. & Mrs. Alfred E. Jackson, "Inverlochy" Lake Road, Katonah, N. Y.
 Mrs. Mary Johnston, 730 Marion St., Denver 18, Colo.
 Miss E. Keightley, 63 Essex St., Masterton, New Zealand.
 Mr. Alois Kober, Canavesgasse 2/12, Vienna 23 Atzgersdorf, Austria.
 Mrs. Stanley Krasner, 12 Christie St., Pleasantville, N. Y.
 Mrs. Bernadine Krouse, 2680 Tremont St., Philadelphia 15, Pa.
 Mrs. Alice Lemaire, 119 Joliette St., Manchester, N. H.
 Mr. Arthur Liddell Menzies, 1284 Stanyan St., San Francisco, Calif.
 Mrs. J. R. A. Morris, 36 Londonderry Way, Summit, N. J.
 Mr. & Mrs. J. Bruce Neil, Washburn Road, Briarcliff Manor, N. Y.
 Mrs. James J. Powers, 1183 Pines Lake Drive West, Wayne, N. J.
 Mrs. Martha Reese, Chappaqua Road, Briarcliff Manor, N. Y.
 Mrs. Ernesto Stag, Jr., 61 Sheridan Avenue, Hewlett, N. Y.
 Mrs. C. R. Strong, 3236 Columbia Parkway, Cincinnati 26, Ohio.
 Mr. & Mrs. George L. Tracy, 69 Flat Rock Drive, Easton, Conn.

A SEPTEMBER SPRING IN THE SELKIRKS

ROY DAVIDSON, *Seattle, Washington*

I am in the throes of rock garden construction; it is not the first time and, although I can hope to attain a fairly natural looking effect in the end, I find an old familiar feeling assailing me when I am out in nature—a feeling of the futility of attempting to imitate nature's simple and very handsome construction. I have a little rill coursing down a gentle slope, through a series of small waterfalls and ponds, but it will never, I fear, have the serene charm of a crystal stream I took much time to admire this last summer in the Selkirk mountains in the northeastern corner of Washington, where the tinkle of each miniature cascade joined that of the others and lost its identity in a pleasant cacophony of rushing sound.

The broad banks were deep with myriad mosses and there were flowers in profusion even as late as mid-September. Thousands of lacy triangles of the oak fern, *Dryopteris linnaeana*, were on a moist bank, contrasted with more thousands of the greenest shining trifoliate leaves of *Coptis laciniata*, the western goldthread. A strawberry, probably *Fragaria bracteata* and the handsome quinquifoliate *Rubus pedatus* were in both flower and fruit, the last one of the best, indeed, one of the only acceptable members of its genus in the garden. Also in fruit were several bold clumps of foot-high devil's club, *Oplopanax horridum* with bold red fruit clusters against stunning clumps of bold green leaves.

The satiny pale silver-green leaves of huge spreading colonies of *Clintonia uniflora* set off the brilliant blue beads of the fruits; a great mass of *Cornus canadensis*, on another slope, was just going over, with many red fruits and yet some still holding their flower-like bracts; *Tiarella unifoliata* trailed along in

greatest profusion of soft downy leaf and thousands of tiny star-flowers; a handsome saxifrage had long since flowered, but the rich leathery deeply indent, oval leaves studded a steep mossy bank in a magnificent way. But the queen of the scene was, without doubt, the ethereal *Parnassia fimbriata*, nodding its delicately fringed, snowy flowers in the spray of the stream, which fell between boulders into a small, deep and quiet pool, but only for a moment, to rush out again through endless mossy banks of the same and other plants in the intermittent sun and shadow of the towering spires of sub-alpine firs, *Abies lasiocarpa*, and western hemlock, *Tsuga heterophylla*—rushing to the river and the sea before winter, in order to return as snow, to melt and again enjoy a springtime of life-giving to this lovely place.

From such profusions of these herbaceous plants, it was scarcely possible to tell where I took some away. I can only hope that the inspiration and observation of how they grew there will make it possible for me to provide a suitable spot for each alongside my own tiny stream, and in time, that I may hope to have, not imitated, but perhaps devised, a cool quiet place that will recall this loveliest of glades in the September Selkirks, 1962.

THE FABULOUS WORLD OF THE MUTANT TRILLIUMS

JOHN C. LAMBERT, *Wixom, Mich.*

Whenever the mention of *Trillium* enters a conversation of wildflowers, the question often asked but seldom answered is; what are the contributing factors causing the mutation or variation of *Trillium grandiflorum*? The apparent lack of practical or available scientific knowledge as to the cause of these variations is undoubtedly due to the small number of botanists or wildflower lovers who have access to these fabulous mutants.

They range from the ultimate of the all white petaled variety, with from six to forty flower petals, to the green and white petaled, and the all green petaled varieties.

There are two types in the all white classification, (1) Trumpet, with the petals in the same position as the standard white, flaring outward. (2) Gardenia, with the outward petals curling outward and the inner petals in a tight curling cluster around the center. Both types are beautiful and extremely rare. In some areas of the *grandiflorum* range they are more prevalent than in others, but never, to my knowledge, ever common.

The green and white petaled varieties are also outstanding in their appearance. No two plants seem to be alike in color markings, size or shape. These range from a green streak in the center of the flower petal, to varying degrees of a combination of green and white markings over the entire petal area. Sometimes the sepals also try to get into the act and acquire a green and white coloration in keeping with the flower petals. Also in these variations there occur double forms ranging from six to thirty petals.

These mutants do not seem to have a standardized seed pod or capsule. Their needle-like capsule appears to be sterile or inactive. However, it is rather difficult to believe, in view of their wide spread distribution, that they reproduce solely from a division of the bulb. In any case, nature somehow has its own effective way of propagating this species.

After reading an article in an old scrap book loaned by a friend, the author advances the thought that the mutation or variation from standard is caused by an excess amount of radiation in the surrounding soil. On several expeditions to



Maxcine Williams

Parnassia fimbriata

the land of the "rogues", I have intended to take my Geiger counter along to test out this opinion. However, it has never been in working order when wanted.

I have particularly noted that in the areas where the mutations are the most plentiful and beautiful, they grow in a rocky top and subsoil. In fact, I have never found them in any other environment.

If you ever enter one of the areas of the *T. grandiflorum* mutants, count yourself fortunate to be one of the favored few who have been privileged to see "The Fabulous World of the Mutant Trilliums".

ELSE M. FRYE

1884 — 1962

It is particularly fitting that we pay tribute here to Else M. Frye, who died October 14, 1962, since she was a frequent contributor to the A. R. G. S. BULLETIN beginning with its first issue, Vol. 1 No. 1 of January-February 1943. The subjects about which Mrs. Frye wrote included such diverse topics as bog gardening and scree gardening, woodland gardens and alpine plant collecting. She wrote also for many other publications, always with precise and colorful descriptions of plants and her feelings for them.

The home of Dr. and Mrs. T. C. Frye was the location of the organizational meeting of the Northwestern Unit of the A. R. G. S. Great impetus was given to the group all through the early years as Mrs. Frye gave encouragement and assistance. Her help made possible rock garden shows sponsored by this group. She served as secretary, appeared frequently on the program, and goaded members to serious study. Her generosity in opening her garden to the group for visits gave them a unique opportunity to become acquainted with many unusual plants, some of them collected natives, some procured from other nurseries, and many more grown with painstaking care and skill from seed from places near and far.

Fortunate were those novices who were privileged to be tutored by so dedicated a garden enthusiast as Else Frye. She instilled a great love of fine plants in their lives as she shared her knowledge, accumulated through reading and experience alike, with all who were interested in propagating the treasures of the plant world and then growing them, as she did, for the utmost possible enrichment of a pleasurable garden.

FKR

"WOODLAND"

ELSE M. FRYE, *Seattle, Washington*

MAYBE IT IS the exigencies of these cruel times; maybe only the years that are crowding, but I definitely need and want the sanctuary that a little piece of woodland affords, quiet except for the rustle of birds; the sigh of the wind; the drip of rain. This feeling of healing could be absorbed from a spot of only a few square yards.

My own favorite spot is roughly 100 feet by 40 feet; I say roughly because it is not a rectangle. When we first moved to this place it was the last area to really take shape in my mind. There were two very large arbor-vitae trees, one at each end but fortunately not in a straight line with the property. Connecting the two were solid and army-straight phalanxes of sword and maidenhair ferns. Behind these were a pine, *Pinus monticola*; some sizeable Douglas fir, *Pseudo-*

tsuga taxifolia; a jungle of saplings with much snowberry, *Symphoricarpos racemosus*. At the lower end at stream's edge were three large alders, *Alnus oregona* and clumps of vine maple, *Acer circinatum*, which carried across the stream. The upper end was completely blocked by a huge pile of debris, tin cans, broken crockery, branches, all more or less imbedded in good compost.

A little at a time it took form. First a wide gracious curve was plotted from the upper arbor-vitae to the lower and the intervening lawn was spaded and prepared for planting. And since this was fronting on the lawn and naturally conspicuous I used the bolder and brighter shade-lovers for this area. My old garden had been primarily a collector's garden with all my effort bent toward making the plants fit together in amity and harmony. Here I decided to have sweeps and drifts of splendid color. This is the wettest portion of the garden and the plants chosen fairly strutted their stuff. *Primula pulverulenta* Bartley strain made a sheet of delicious pink, the candelabra stems thirty inches tall; soft and deep crimson flowers of *Primula japonica* coming out of a froth of blue brightness of *Myosotis* 'Blue Ball' were most lovely.

Closer to the ground and extending back under the tree is a carpet of *Primula rosea grandiflora*—I have never seen them more beautiful. Behind this was an area of summer and fall bloom. A great mass of *Peltiphyllum peltatum* was an accent against the lower arbor-vitae and up from this were masses of a clear, chartreuse trolius; gold-yellow *Caltha palustris* and a great sweep of astilbe; white, cream, pink and red of various heights making it much more interesting than if it were uniform.

This area is also shaded from the front by a magnificent catalpa but as it curves around the upper arbor-vitae there is more sun and the ground is drier. There I have put in some rhododendrons, species and hybrids, with low ground-cover such as *Pernettya sp.*, Comber; gaulthetia varieties; *Gaultheria cuneata*; *Calluna vulgaris* 'H. E. Beale' and the white *Calluna vulgaris* 'Searlei'. At the back was *Magnolia soulangiana nigra* and a glorious mass of forsythia. In and out among these are creamy *Erythronium californicum*; a group of rose-maroon *Erythronium hendersonii* and one of a live pink, *E. johnsonii* 'Rose Queen'; pink hepaticas for spring and tiny pink *Astilbe simplicifolia* takes over for late summer.

Things have a way of growing. New accents and more color were added as time went on and while this was not completed it was initiated by the end of the first summer. Still that pile of debris seemed to taunt and non-plus me with a sort of personal animus. But by the end of the next summer the bad had been separated from the good and I was not slow in finding places that were crying for the rich leafmold. The back area was open and we could enter. We began to clean it out almost prayerfully; we did not want to harm it. Dead branches were cut out; the saplings that had no chance under the shade canopy of the older trees were removed; the beautiful snowberry which can be such a murderous pest was eradicated—we hope! The ferns were dug up and set aside.

We now have a path through this—we had little to do with plotting it—it just naturally took off in a swaying way, past this tree and that. It would have been awkward to force it elsewhere. Of necessity we had to bring in soil to fill up the holes and while not level there is a pleasant feel to it.

On the right of the path we put in some small pines which will ultimately be the heavy part of the planting; they are near the boundary but not in line. Among them are many rhododendrons, large and small and where we approach the more open portion near the stream, azaleas; *Vaccinium parvifolium*; salal, *Gaultheria shallon*; deciduous magnolias; *Styrax obassia* and *Ginkgo biloba*. And next came the groundcovers; we were now ready to make use of the ferns,

Polystichum munitum and *Adiantum pedatum* as well as the deer fern, *Lomaria spicant*; *Polystichum andersonii* which I had had the fun of growing from buds. These were arranged more or less on both sides of the path which definitely made the whole area one.

Also intermixed were Solomon's seal; false Solomon's seal; grass leaved iris species; *Actaea spicata* and its white-berried form; *Polemonium caeruleum*; *Polemonium carneum*; *Anchusa myosotidiflora*; *Primula sieboldii* with lovely crinkled foliage topped with large soft flowers of pink, white and crimson. *Vancouveria hexandra*; *V. chrysantha*; *V. parviflora*—all are at home here, together with gingers, *Asarum caudatum* and *A. howellii*. Pink-flowered *Oxalis oregana*; white *Dicentra* 'Sweetheart'; *Sisyrinchium bellum*; *S. brachypus* and such oddments as *Scoliopus bigelovii* and *Clintonia andrewsiana* find places to their liking. The trunks of trees make a perfect background for the cyripedium species.

The very edges of the path were reserved for low-growing treasures; Trailing arbutus, *Epigaea repens*, and *Gaultheria procumbens* made a cover on this side of the arbor-vitae. Through this pops in early spring and late summer enchanting hardy cyclamen in white, pink and crimson. *Omphalodes cappadocica* grows lushly in the shade—I have hopes its seedlings will be spattered over the area. *Trillium ovatum*; the double-flowered bloodroot; the blue *Jeffersonia dubia* as well as *J. diphylla*; the small *Asplenium viride*; the lovely *Primula clarkei*; *Coptis asplenifolia*; *Shortia galacifolia* and its relatives from across the Pacific, *Shortia uniflora grandiflora* and the schizocodon varieties; *Soldanella montana*; blue hepatica; all the *Anemone nemorosa* varieties make a pastel-colored garland.

The lower ground is quite unfinished but come another summer the planting will be continued. Down the trail I wander every morning immediately after breakfast—it is a ritual! I am very happy to have this space so well suited for a wild garden but I could do with much less. With a few square yards I should begin with a pine, short needled, and against it might be a green-leaved Japanese maple; *Pieris japonica* and *Vaccinium ovatum*. I should try to keep the foliage quiet but lovely. *Vaccinium vitis-idaea* and *Gaultheria miqueliana* should cover the ground. A clump of trillium; blue hepatica; yellow *Narcissus bulbocodium citrinus* and purple violets might finish the planting. And to bring the birds, a sparkle of water in a shallow bowl, not one I could buy but something shaped with my own hands, the swirling imprints of my fingers left on it. More space, more elaboration but finally a beauty spot!

"Woodland" is a reprinting of an article written by Else M. Frye. It first appeared in the March-April 1952 *Bulletin*, Vol. 10 No. 2. (Ed)

OMNIUM-GATHERUM

Now that the first efforts of the new editor (October 1962 *Bulletin*) have flowered and gone over without any particular repercussions, it is with becoming modesty that we quote the following compliment from one of our members. "My copy of the October *Bulletin* reached me a few days ago. I have read the articles that interested me most, and can't see that the *Bulletin* has suffered any from the change of editors." Thank you, dear reader, for a very sincere compliment.

It was foretold by the stars long ago that wherever there is a novice, there will be mistakes, too. So rather than cross up the stars, we made a mistake. This we will rectify here and now.

At the end of Nell Lee Gosling's article, "Project Rock Garden", appearing in the October number of the *Bulletin*, there were supposed to be four listings of plants of various classifications. The article appeared minus the fourth classifica-

tion. This was brought on by the inexpert fumbling of such puzzling things as galley proofs, proofreading, dummies, and copious paper by an editor to whom such things were as new toys. So that you may have the full benefit of the article, herewith is the omitted portion:

(4) These little bulbs are so welcome in spring, even though their leaves, often a bit messy for awhile, must be left on if one wants good bloom the next year. All were bought as bulbs.

Bulbocodium

Chionodoxa

Colchicum

Crocus—species

Eranthis

Galanthus

Leucojum

Muscari

Narcissus—species

Scilla

Tulipa

Why do people stutter in their writings when they use the word "blue" to describe a flower or the sky? Often one sees "blue" used like this—"The sky was cloudless and blue, blue." Or "There is no finer color in the garden than the blue—blue of *Lithospermum prostratum*." One never sees red, red or green—green or any other color duplicated. This is not a criticism for we are not certain that we have not done the same thing, or wanted to. Rather we are interested in the reason why "blue" is the color picked out for this double exposure.

Perhaps it is because, of all the colors, blue is the one with the greatest depth. When one looks into the blue—blue gentian (there we go), one's gaze passes through the blue haze reflected from the flower's great cup, penetrates the surface and finds itself engulfed in an hypnotic cosmos of intangible delight. Smothered is a better word, perhaps, or encompassed or drowned. It may be that one's reaction to red or yellow is rapid enough to be satisfied to express the experience by the use of a single descriptive color word—that is, red or yellow.

It can be that one's reaction to blue, in terms of the spoken or written word, is complicated by what happens to the optic nerve when confronted by the color blue. This nerve, somewhat stunned by the very blueness of blue, reacts more slowly than usual and allows time for a momentary clinging to an extraordinarily pleasurable experience and generates in one's consciousness an intensified desire to express the experience by doubling up on the key descriptive word. Hence we have blue—blue.

Regardless of the real reasons for this phenomenon, we are grateful that there are flowers available to us of such wondrous color that the doubling of the descriptive color word seems most natural.

From reading the very interesting articles written by our New Zealand contributors, we find that the prevalence of white flowers among their natives, as reported by them, strikes a very responsive chord. White flowers have ever been our favorites.

In our northwest country twilight lingers for a long time and in that most tranquil time our gardens are at their best. While the light remains, after the sun has set, and even as it starts to fade, the flowers that are not white retain their daytime charm, although their colors may have different values than in daylight. But with the further fading of the light, the reds and the purples and the blues recede into the background and are not seen again until morning. They are soon followed by the lavenders and the pinks. Then the yellow flowers, which have put up a harder fight against the encroaching darkness, lose their brilliance and soon join the others in nightlong visual oblivion.

Then as night completes its triumph over daytime's retreating forces and darkness settles over the garden, one can still see the lovely white blossoms. They

glow with a pale insistence and are the night candles of the garden. They seem to say, "We may not have the warmth and brilliance of the other flowers, but when dusk has erased their colors from the garden and to the gardener they are as nothing—memories only—we, the white flowers, remain to light the garden through the hours of darkness. We are beloved of the night-flying moths and the stars look down upon us and are our friends. Gardener! Love us, too."

Mr. Edgar L. Totten, our secretary, sends us news from North Carolina. He writes:

Did your rock garden look a bit drab last October? Not many may have tried some of the new dwarf chrysanthemums. There are a number of real dwarfs to be had now and they come in many colors. I am not referring to those so-called azalea mums. The names of the new dwarf chrysanthemums may differ in various parts of the country, but among those I have are 'Bambino', 'Bingo', 'Apricot Sheen', 'Pink Cherub', 'Tiny Rubies' and 'Ruby Mound'. Several of these are recent award winners and none exceed a foot in height.

Only one colored slide has been contributed during the past year by our membership. With the new fast film, some outstanding slides should have been produced. Many of the slides we now have in our collection are of very poor quality and should be replaced. (This is a matter that should be taken up at the regular meetings of the various units. Ed.)

A strange *Trillium*: We had climbed some two thousand feet up a mountain from Hickory Nut Gorge amid thousands of specimens of *Trillium sessile*, until we reached the top of the mountain and a long abandoned cabin. Near the cabin was an enormous trillium, twice the size of any we had encountered on the way up. In the true *Trillium sessile* the leaf is quite pointed, but in this one the leaves were more like those of *T. erectum*. The flower, except for size, was not different from *T. sessile*. We took a different route down the mountain, but no where did we encounter another of these giants. I can only surmise that the former occupant of the cabin was a trillium enthusiast and had brought this one in from some distant place.

Here in North Carolina, all of our native rhododendrons, azaleas, laurels and hollies are growing in almost pure red clay with the exception, maybe, of a bit of decayed leafmold from their own dropped foliage. All the authorities tell us that these plants should be grown in a mixture of almost everything imaginable—more complicated than an infant's formula. I often wonder if we are not catering unduly to these plants. Hottes, in *The Book of Shrubs*, says of mountain laurel, "They are at home in sandy, acid soils, but dislike clay and lime." If the reference to clay were true, there would be few mountain laurels in our North Carolina mountains.

Insectivorous Plants: Are you interested in the bug catchers? If so, they may be obtained from:

Carolina Biological Supply Co.,
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They list practically the whole lot.

INTERCHANGE

At your service is the vast accumulation of botanical knowledge and gardening experience that is the wealth of the American Rock Garden Society. Almost any question that you might ask can be answered by some member. Do you wonder where to get a certain plant your garden lacks? Ask! Would you like to know where certain seeds may be obtained? Ask!

Is it cultural directions you desire? Ask!

Do you need information on some special genus? Ask!

Or a certain species? Ask!

Have you had wonderful success with some favorite plant? Tell!

Do you have an idea to pass along? Tell!

Is there a question of plant nomenclature? Ask!

Is there a new book of gardening interest that you have read? Tell!

Do you have a rock garden construction problem? Ask!

If so, use this column. Send your "Asks" and "Tells" to the editor and they will appear in a subsequent *Bulletin*.

Do you have the knowledge or the experience to help some inquirer?

Do you have any comments on what appears in this column?

Contribute to this column! Ask; tell; answer; comment, but do it often. Use the column for all that it is worth; keep everything brief; read the column; help other members, if you can for they will help you in turn. If your answers are longer than can be accommodated in this column, then write an article—a short one—a medium one—better still, a long one, if it is germane to the subject.

To christen this column, the editor asks, in the interest of members who have written to him, that articles be written and forwarded to the editor on the following subjects:

The genus *Lewisia*—In the Wild—As Cultivated in the West—In the East—In the British Isles.

The genus *Draba*—Cultural directions.

That the *Bulletin* may add to its usefulness, herewith is established this column under the name of INTERCHANGE. Use It!

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