

BULLETIN

of the

AMERICAN ROCK GARDEN SOCIETY

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STARTING WITH NATIVES

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

LOCAL PLANT MATERIAL alone would hardly make a good garden of any kind, save in exceptionally favored regions. But in rock gardening, which depends largely on wild flowers, a few natives are usually indispensable, some as good as the most farfetched, others at least acceptable or useful space fillers. At all events, in beginning the planting of a rock garden it gives one a comfortable feeling to find some serviceable species right on hand.

Such was our case when we moved in here and, hoping to turn a sore spot into an asset, began to transform a rocky slope of miserable stump growth, brush and weeds into an alpine garden (this BULLETIN, 15:2). Some good plants could be left undisturbed when the rocks were rearranged, others needed to be shifted only a few feet or yards, still others were to be had at the cost of a few minutes' walk or a short drive in the car.

Most appreciated among the aborigines right here to receive us were bloodroot (*Sanguinaria canadensis*) and bluets (*Houstonia caerulea*). They were present in abundance. So delighted were we, especially with the bloodroot, that, when the space at the bottom of the slope was bulldozed to give us a practically unbroken view of the rock garden-to-be and a quiet foreground, we rescued many of the plants growing there and transferred them to the slope. In the next few years we learned that *Sanguinaria canadensis* can increase faster than may be desirable; for with a few hives of bees close by it sets seed prolifically. However, collecting the seed pods provides an easy remedy. As a woodland plant it thrives amazingly well in full sun, especially if its roots are under a rock. Its flowering period may be deplorably brief, particularly if it falls in a warm and windy spell, but the lush exotic foliage remains an adornment of the rock garden throughout the summer. We value it doubly in the latter part of August, when it assumes its end-of-the-season color which at a distance produces the effect of a dwarf bush covered with yellow flowers. *Houstonia caerulea*, none the less precious for being so abundant, is one of those versatile little plants that "look right" in a variety of situations, in the open ground, between rocks, as a solid little mat or mixed with other small species, in sun or shade, and in some places it flowers all summer.

Another good native present on the site before it became a rock garden is the rue-anemone (*Anemonella thalictroides*), also a woodlander which, we find, is not afraid of open spaces and which, too, appears to contain everblooming potentialities. Last summer, at least, we had one plant which flowered profusely from spring to fall. Probably it bloomed itself to death, for no plant was seen in that crevice this year and it had not occurred to me to propagate it freely. This species has the freedom of the garden and never abuses it. Its daintiness is always appreciated wherever it chooses to make its appearance.

Beside this first-rate trio, among herbaceous perennials which we did not have to introduce quite a few lesser ones are appreciated or tolerated. Blue-eyed grass (*Sisyrinchium angustifolium*), for instance, always comes up in many spots, but being somewhat untidy looking when not in flower, it is usually herded together in one place where its concentration may amount to a modest display. Less respectfully treated is the local bellwort (*Uvularia perfoliata*). Its longish bell-shaped flowers are interesting enough as far as their shape goes, but unfortunately are just a shade more yellowish than its leaves and hence are easily overlooked. We keep it restricted to the "wild fringe," along with *Viola biflora*, twisted stalk (*Streptopus amplexifolius*), false Solomon's seal (*Smilacina racemosa*), hairy Solomon's seal (*Polygonatum commutatum*), wild sarsaparilla (*Aralia nudicaulis*), bitter nightshade (*Solanum dulcamara*, a naturalized immigrant from Europe) and others. More appreciated than these on the wild border are the stately white baneberry (*Actea alba*) and a variety of ferns. Finally, in the rock garden proper, we still tolerate the common speedwell (*Veronica officinalis*) in two or three locations; not for its flowers, which merit neither praise nor contempt, but because it is one of the best ground covers in sun or shade, doing well where even *Ajuga reptans* and *Cerastium tomentosum* fail, covering crumbling rocks on which little else can get a foothold. If its leaves were glossy and not of a hairy dullness it would be a really choice ground cover, and its mats are tight as a well shingled roof.

Ferns were from the beginning well represented on the slope before we went to work on it and they still are, by at least a dozen species. Some were allowed to stay where they always were, or in new locations of their own choosing if these suited our purposes, or they were shifted about a little for better effect. But since hanging name tags on ferns is for the amateur treading on thin botanical ice, I had better keep on safe ground, and safe ground here is staked out by only four species: the Christmas fern (*Polystichum acrostichoides*), the common polypody (*Polypodium vulgare*), the marginal woodfern (*Dryopteris marginalis*), and the lacy but weedy hayscented fern (*Dennstaedtia punctilobula*) which, fortunately, is not too difficult to keep under control. We like the ferns without being partial to them and in a rock garden hanging on the fringe of the woods they "belong." Christmas fern and marginal woodfern lend themselves especially well to informal borders beside steps. For this purpose a good many plants of the former species were brought out of the woods.

Other natives not originally on the rock garden site were also collected, either from our own woods or from the near neighborhood, with the traditional three-mile limit of maritime affairs fairly rigidly observed in these landlubbers' exploits. *Hepatica americana* was abundant just a hundred feet from where we wanted it. The dozen specimens thus "imported" from another part of our grounds have in a few years multiplied into heavy colonies along a flight of steps and in the partial shade furnished by evergreen ferns.

Erythronium americanum and *Trillium erectum* came from a neighbor's woods, where the former grows by the thousands, whereas our own drier woods contain not a plant of either species. Two other neighbor's contributions are

may-apple (*Podophyllum peltatum*) and *Trollius laxus* on the wild border. *Dicentra cucullaria* was dug up by the roadside three miles down the hill and has greatly increased. It does especially well in a very stony spot where later in the season *Geranium sanguineum* covers the ground.

Aquilegia canadensis was brought in as seed, also collected along the road. Five plants of *Cypripedium acaule* were experimentally dug up in our own woods four years ago and planted in a similar location, in the thick needle mulch of a white pine atop the rock garden slope, but they till now have refused to flower. Recently we heard that manuring this wild orchid will bring it into bloom and we intend to try this medication. The early saxifrage (*Saxifraga virginensis*) is another well-liked weed from rocky waysides which has fittingly naturalized on a sandstone ledge and in a shady wall.

At two different times I collected fringed milkwort (*Polygala pauciflora*) from a place where in late May it fairly paints a short stretch of roadside, only ten minutes' driving time away. It was somewhat slow to take hold in the garden, but the older planting now provides a very colorful patch in spring, with the later flowering partridge berry (*Mitchella repens*) and mosses as bedfellows. This, incidentally, is the only successful use of mosses which I am able to report. Attempts to establish pure moss stands, miniature moss lawns in the Japanese manner, never led to anything better than an ideal germinating place for a great variety of weeds.

Two members of the family Pyrolaceae, *Pyrola elliptica* and *Chimaphila maculata*, the variegated pipsissewa, do not properly belong in this account, except in so far as we had our eyes on them from the beginning. A few plants of *Pyrola elliptica* growing just two or three feet beyond what formally is the western border line of the rock garden were left undisturbed for seven years to give them a chance to increase under virtually ideal circumstances, which they did. Only recently about half of them were moved into the rock garden proper and we are still watching their behavior anxiously. *Chimaphila maculata*, nowhere found on our grounds as yet, was taken from the woods of an absentee neighbor who would not know what we were talking about if we mentioned pipsissewa (or *Chimaphila maculata*!) and who, during his one or two yearly visits never strays farther from the house than the cut grass permits. This variegated or white-veined pipsissewa is a really enchanting woodlander, all the more treasured because it flowers at the height of summer when bloom is scarce. It has taken much more kindly to the transplanting than has *Pyrola elliptica*.

Since one naturalized immigrant was referred to above, two others might be mentioned here. Running myrtle (*Vinca minor*), we were told, twenty years ago formed a solid lawn about the house and still is abundant in many places, even across the road. In this rather dry region we find it a fairly slow grower and therefore plant it in quantity in the few marginal rock garden areas where we want it. Creeping Charlie (*Lysimachia nummularia*) is a weed in the present lawn under a huge old sugar maple where no grass does well. In the rock garden it has grown into a pretty ground cover in a difficult spot with afternoon shade and its yellow flower carpet in June is as gratifying a sight as many an over-publicized exotic.

Some native perennials, such as *Asclepias tuberosa*, *Monarda didymocarpa*, *Iris verna* and *I. cristata* were bought as plants or grown from seed commercially obtained, wherefore no more need be said about them, except, perhaps, that today we would know where to collect them with less trouble than commercial sources not infrequently provide. Two nursery-supplied natives, however, have made local history here. They came as unintentional bonuses, hidden in the sphagnum moss in which the plant shipment was packed. Since we recognized

them as ericaceous evergreens and were curious to see what would come of them, we planted them in the rock garden. One of the three plants turned out to be leatherleaf (*Chamaedaphne calyculata*), the other two, American cranberry (*Vaccinium macrocarpum*). Both species are typical bog plants, and have relatively prospered in a spot which is pure dry clay! *Chamaedaphne* has grown to twelve inches in five years and flowers modestly. The cranberry has never flowered but has spread out in a patch more than a foot across — while the paid-for part of that order within a year proved a total loss.

One unusual native deserves special mention: *Sedum rosea* (syn. *S. roseum*). This is a really good and strangely neglected rock plant. The Index to the ARGS BULLETIN contains a single reference to it (and what Farrer describes under this name is, as Clay points out, an entirely different plant). *Sedum rosea* is a circumpolar-montane species left behind by the last ice age. While still frequent along the coast of Maine, it is known from only five locations in New York, a few in northern Pennsylvania and one last southern outpost on Roan Mountain in North Carolina. Our specimen came from only a mile away as the gift of a friend and neighbor, Henry F. Dunbar, the official Ulster County botanist. His property contains part of the Esopus gorge, the most southern habitat of this species in New York. We find it a very pleasing rockdweller. Its general appearance superficially might be described as intermediary between *Sedum sieboldii* and *Euphorbia myrsinites*. The inflorescences, yellow or greenish yellow at the edge of the corymb (staminate flowers), purple in the center (pistillate flowers), are not as showy as those of its Japanese cousin but, to our taste at least, better than those of the euphorbia which it resembles. It too is essentially a good foliage plant. Like *S. sieboldii* it is deciduous, has reddish leaf edges and purplish stalks. For a lover of cool moist cliffs it does surprisingly well here in a dry spot receiving sun for the better part of the day.

Among the woody natives *Mitchella repens* has been mentioned as a good companion for *Polygala pauciflora*. Of the original inhabitants of the rock garden two spicebushes (*Lindera benzoin*) were left standing. We were later told that this bush is a moisture indicator, and indeed a narrow streak of slope below it in the driest of summers is always moist a few inches below the surface. Now we make use of the noon shade of the spicebush (kept pruned back to a desirable height) to give protection to a small planting of *Gentiana acaulis* (not a native, of course). One pinxter-flower (*Rhododendron nudiflorum*) of good size was brought in from the open roadside a short stretch up the hill, because in our woods the deer keep the many plants chewed down to ground level. But a number of mountain laurels (*Kalmia latifolia*) we did transplant from our own woods and this last spring some of them flowered handsomely for the first time. They are kept at the edges of the rock garden where other native shrubs still grow undisturbed: dwarf wild roses (probably *Rosa virginiana*), New Jersey tea (*Ceanothus americanus*), *Viburnum acerifolium*, dogwoods (*Cornus florida*, *C. rugosa*, *C. alternifolia*, *C. racemosa*), *Lonicera canadensis* in an unusual variety with salmon or orange colored flowers, and others. A few white-stemmed birches (*Betula papyrifera* and *B. populifolia*) enliven their not too distinguished greenery which by and by we hope to improve with more mountain laurel.

This collection of gardenworthy natives easily come by would no doubt be more diversified if our grounds, and most of the neighboring land, had not been farmed for a century and a half. Stone fences once hedging pastures still are present far back in the woods and under a large stand of tall young maples a hundred yards from the house the last unyielding furrows plowed on the farm about thirty years ago still are discernible. And what poverty of vegetation beneath these maples! What native flora is to be found in other parts of the

woods probably consists mostly of species which have recently reestablished themselves from areas untouched by man or cattle for more than a human generation. The pipsissewas are a case in point. Ours was the last farm in the neighborhood to be abandoned as a farm. Almost as a matter of course, therefore, the white-veined pipsissewa (*Chimaphila maculata*) was absent from our grounds. But one has but to climb over the stone wall marking the southern boundary to find it plentiful. Again, in the woods to the north of ours the green pipsissewa (*Chimaphila umbellata*) is frequent and, there being no stone fence there, it has begun to stray over to our side. Typically also, trailing arbutus (*Epigaea repens*), which seems to require time to take possession, is totally absent here but abundant on neighboring properties on top of the ridge where the soil is too thin and poor ever to have been farmed. We have not yet succeeded in our attempts to re-introduce it. Direct transplanting was never seriously tried, i.e., with no more than two or three specimens, which hung on to their new homes for two summers or so and then perished. Collected seed never germinated for us. But at this writing (July) about fifty cuttings are in a propagating frame and we hope that many of these will root.

CELSIA ACAULIS

BARELY MENTIONED BY FARRER, and completely ignored by all the other books on rock plants I have consulted, although its name has appeared in the *Bulletin of the Alpine Garden Society*, the most admired plant in my garden last fall and this spring has been *Celsia acaulis*. A relative of the mulleins, it makes a prostrate rosette six inches across of narrow leaves an inch wide, with the petiole almost as long as the blade, lobed, deeply veined, dark metallic green. The flowers open one at a time on thin stems two or three inches long which rise very little above the rosette. From mahogany buds they open into shallow cups of clear yellow with orange stamens.

Long ago I obtained seed from Capt. H. P. Leschallas and raised the plant in the alpine house, but it never seeded and eventually was lost. Capt. Leschallas, the source of many treasures, was no longer alive, and for years I searched every seed list and made numerous queries, all in vain until in 1956 Stuart Boothman offered seed of it. Sown in a fruit jar, it germinated profusely in the spring of the following year. Most of the plants were kept in pots, and all of these perished before cold weather. A few were set in several types of soil in the rock garden and began to flower in late summer. I had never regarded the plant as fully hardy, and was certain that it could not survive the alternate cold and moist warmth of last December. But when the colossal snowdrifts melted in late April, celsia was as fresh and cheerful looking as it had been in September, and most of the rosettes had increased in size. It began flowering almost at once, and has continued without pause for nearly two months, with no sign of stopping, although the flowers are not as profuse as they were a month ago.

Apparently good seed is being set, so that a small amount may be available for the Seed Exchange. As germination seems profuse, though slow, I shall request that only a few seeds be sent each recipient, so that the plant may be distributed as widely as possible, to strengthen its chance of survival in the gardens of this country. Its only need seems to be a well-drained soil in full sun; even the shade of a dwarf tulip, or of a lath frame, is intolerable to it in this climate.—CRW

BRANKLYN GARDEN, PERTH

DOROTHY G. RENTON, *Perth, Scotland*

(Reprinted, by permission, from *The Journal of the Royal Horticultural Society*)

BRANKLYN GARDEN, situated about $1\frac{1}{4}$ miles from the city of Perth, is little more than 2 acres in extent, and since 1922 has been gradually evolved on the former site of a somewhat dilapidated and overgrown soft fruit and pear and apple orchard. The aspect is a sloping one mainly to the south and south-west, with a fine view of the River Tay and the distant hills beyond. The annual rainfall averages about 30 inches and the garden lies at an elevation of 200 feet above sea level. The soil is a good medium light loam overlying rock, and although hot sunshine is somewhat rare in this district the ground dries out comparatively quickly, owing to the rapid drainage of the sloping site. The development of the garden began after many weary months of toil, grubbing out hundreds of useless bushes of raspberry and gooseberry, and eradicating bishopweed, bindweed, and thistles, which were well established. Fortunately, many of the old apple and pear trees were large, well shaped specimens, and the best of these were retained to form established features in the skeleton plan.

This framework was gradually extended by the addition of selected standard specimens of pyrus, prunus, acer, laburnum, syringa, crataegus, and other large shrubs. Care had to be taken in the selection of shrubs to suit the climatic conditions of this part of Scotland where severe late frosts occur frequently.

After dealing with the necessary formality of constructing a low retaining wall and paved terrace round the house, and including beds of roses and tulips for colour effect, it was decided to make the rest of the garden as informal as possible. A rock garden was formed on the steepest slopes and running water from a spring was incorporated to make a small stream with pools for water lilies and bog plants. On the lower areas there are screes of various types which contain the more difficult and fastidious alpine. The material used in the construction of the original screes was five parts River Tay gravel with its natural admixture of sand to which was added one part leaf soil and loam all according to the prescription of the late Reginald Farrer. As time passed it was found that a richer mixture gave better results. More leaf soil and loam were incorporated but the surface layer of pure chips was retained to ensure quick drainage.

Ghent and mollis azaleas and Japanese maples are planted near by for contrast and evergreen shrubs and slow-growing conifers are used as a background.

Throughout the rock garden dwarf conifers are planted to add variety, and after twenty to twenty-five years' growth there are now many good specimens of *Cupressus pisifera* and its varieties, *C. leptoclada* and the tiny *C. tetragona minima*. Acting as point plants to emphasize height are *Abies balsamea* var. *hudsonica*, *Picea excelsa pendula*, *P. excelsa remonti*, *P. alba echiniformis*, *Juniperus hibernica compressa* and many other dwarfs. *Tsuga sargentii pendula* has draped itself over a large rock and is well displayed in this position. Among the small deciduous shrubs are dwarf lilacs, *Betula nana* and many of the willows, including a good specimen of *Salix boydii*. When planting round the dwarf trees care has been taken to retain a sense of proportion.

Daphnes, with their delicious perfume, while valuable throughout the garden, are particularly desirable as rock garden shrubs. *D. cneorum* covers itself with bloom each season and a fine old plant of *D. retusa* has produced several self-sown seedlings. *D. arbuscula* and *D. rupestris*, among the loveliest of the genus, are given a specially choice situation.



Photos by J. T. Renton

Scenes in Branklyn Garden.

The problem of cultivating the recognized tricky alpine has been largely overcome by adopting the principle of "when in doubt plant it in the scree." Scree culture is particularly advantageous in the variable climate of Scotland. During wet periods plants do not become waterlogged and in dry spells they never flag as they benefit by the cool root run. Overhead watering, although seldom necessary, can be done with the knowledge that there is no resultant caking of the surface which always occurs with ordinary garden soil.

Among the scree plants, perhaps one of the best is *Paraquilegia anemonoides*. It has grown for many years on the shady side of a large rock which forms an admirable background for its grey foliage and delicate blue flowers. *Lewisia* seed themselves in profusion and many interesting hybrids have resulted from *L. howellii*, *L. finchii*, *L. cotyledon* and *L. columbiana*. *Androsace pyrenaica* has obligingly crossed with *A. carnea* and produced a very fine pink form. Such fastidious plants as *Ranunculus calandrinoides*, *Omphalodes luciliae*, *Phyteuma comosum*, *Iris gracilipes*, *Azorella caespitosa* and *Helichrysum frigidum*, all grow happily.

The rest of the garden consists of mixed shrub and plant borders with winding grass paths which give a cool and restful appearance. The garden was designed to provide a home for a collection of choice plants, but at the same time consideration was given to colour grouping and dual planting schemes. The larger borders contain a mixture of rhododendrons and flowering shrubs interplanted with the tall monocarpic yellow *Meconopsis paniculata* and the white, blue and rich wine-coloured forms of *M. napaulensis*. The bays in front are filled with such plants as lilies, meconopsis species, paeonia species and iris.

At the highest and driest point in the garden the beds have been filled with heaths interspersed with rose species, genista, spiraea and azalea. There is colour here nearly all the year round, as the collection of heaths includes most of the varieties and height is varied by interplanting with the taller ericas such as *E. arborea alpina*, *E. stricta*, *E. australis* and *E. mediterranea*. *Genista hispanica* brightens the driest places where little else would grow.

One of the most outstanding and successful genera in this garden is meconopsis. The old *M. betonicifolia* now takes second place to the magnificent newer varieties of *M. grandis*. A form of *M. betonicifolia* var. *pratensis* introduced by Kingdon-Ward about 1928 has now been included under *M. grandis*. It is a very distinct and desirable plant of tall and graceful habit flowering two weeks earlier than *M. betonicifolia*.

Ludlow and Sherriff, who are responsible for so many good plants, introduced under their number 600 a form of *M. grandis* which is quite outstanding. It grows 4-5 feet high and has exceptionally large wide cup-shaped flowers of an exquisite translucent blue. It is quite distinct from the original *M. grandis* from Sikkim which flowers earlier, is not so tall, and carries its peacock blue, narrow-petalled flowers singly on stems about 2 feet high. The Sikkim variety does not set seed here but it is easily propagated by division in spring. The large-flowered form of *M. quintuplinervia* spreads rapidly and makes broad edgings to borders either in sun or shade. The hybrids of this plant with *M. integrifolia* and *M. punicea*, while interesting, are not improvements on the type plant. The deep purple dwarf *M. delavayi* and the pale yellow *M. florindae* once grew in the scree but now, alas, are no more. *M. primulina*, also dwarf, and the charming little *M. bella* are treasures now growing in the scree. The new and beautiful pink *M. sherriffii* promises to be a good perennial. Bailey's form of *M. simplicifolia* is difficult to keep true from seed and although many fine natural hybrids have occurred in this garden, none can compare with the original form. *M. sinuata*, *M. aculeata* and *M. horridula* seed themselves throughout the garden.





The yellow *M. villosa*, *M. chelidoniifolia* and *M. beamishii* are quite hardy but the lovely white *M. superba* appreciates protection from winter wet.

Lilies of various types grow well and provide an opportunity for dual planting. *Lilium regale* combines well with Poulsen Roses and also grows through a groundwork of the rose form of *Penstemon diffusus*. *Lilium tigrinum* is associated with *Hydrangea paniculata* and *Lilium martagon album* or *L. monadelphum* look charming with *Meconopsis betonicifolia*.

Among the most beautiful bulbous plants are the nomocharis. These also benefit in appearance from light underplanting. *N. mairei* is probably the most handsome and is grown on a raised bed where one can look up at its nodding spotted flowers. *N. saluenensis* is underplanted with *Cyananthus microphyllus* and *Nomocharis aperta* grows through *Gentiana veitchiorum*. The dainty but less spectacular *Nomocharis nana* is easily grown. *N. oxypetala* now designed *Lilium*, in both its yellow and pink forms, make attractive groups. The new *Lilium sherriffae*, resembling a fritillaria, is a welcome addition as it has flowered two successive seasons in the open and appears to be quite hardy. Gentians in this garden resent a dry situation and consequently are treated as semi-shade plants. Planting the finer types between peat blocks seems to satisfy them, the exception being *G. saxosa* which enjoys semi-scrub treatment.

In shady corners "peateries" have been constructed with blocks of well dried and firm peat forming banks or walls and even edging borders. These peateries provide an ideal setting and home for the ericaceous plants and the more difficult primulas. The petiolarid primulas grow in this situation but require careful attention during summer drought. *Primula reidii* has been grown in the scree and in the peateries, but it is not a long-lived plant in the open and prefers alpine house or frame culture.

Many seedling rhododendrons have appeared in the peat blocks and some charming hybrids have resulted. *Epigaea repens*, *E. asiatica*, and shortias and schizocodons enjoy the cool root run and the *cassiopes* flower freely with a seventeen-year-old plant of *C. lycopodioides* as the most outstanding specimen. Phyllodoces, vacciniums and gaultherias make themselves at home and the tiny *G. humifusa* has established itself firmly in a peat wall. Many other plants show a preference for peat. *Orphanidesia gaultheriodes* with pink flowers like a large epigaea, *Pteridophyllum racemosum* with fern-like foliage and feathery white flowers and the dainty little *Bryanthus gmelinii*, are all particularly attractive peatery plants. *Philesia buxifolia* flowers freely in a sheltered corner and *Anemone obtusiloba* var. *patula* in its blue and white forms, and also *Ranunculus lyallii* and *Glaucidium palmatum* enjoy the coolness. *Omphalogramma elegans*, *O. minus*, *O. delavayi* and *O. souliei* appear to like peat at their roots and *O. vinciflorum* flowers very freely when established.

Dwarf rhododendrons are massed on the upper slopes of the peateries and include the series *Lapponicum*, *Saluenense*, *Glaucum*, *Campylogynum* and *Uniflorum*. These are interspersed with ericaceous shrubs and some of the larger-growing Rhododendron species. One of the forms of *fiactolactem* introduced by Kingdon-Ward is quite outstanding with its bright red sticky foliage bud scales and beige felted dark green leaves. *Pieris forrestii* also excels in spring foliage and its vivid scarlet plumes are as spectacular as any flower. *Rhododendron* 'Cilpinense,' one of the earliest to flower, is followed very quickly by *R. fargesii* and *R. ciliatum* but these run the risk of having their delicate pink buds scorched by late frosts. One of the most charming hybrids is *R.* 'Temple Belle' (*orbiculare* x *williamsianum*) and a particularly free-flowering form of *R. caloxanthum* was grown from seed introduced by Major Sherriff in 1938.



The exquisite blue poppy, Meconopsis simplicifolia Bailey's form, flourishing at Branklyn.

All the Thomsonii series give a delightful variation of shades from pink through orange yellow to pale primrose and planted with them for later flowering are *R. cinnabarinum* and *R. auriculatum*.

In other borders where hybrid rhododendrons are inclined to look dull after flowering they are interplanted with some of the French hybrid lilacs, enkianthus, deutzias, and such shrubs as *Halesia carolina*, *Clethra fargesii*, *C. tomentosa* and *C. paniculata*.

In the more open and exposed situations viburnums do exceedingly well and although *V. mariesii* is perhaps acknowledged to be the best, the forms of *V. opulus* give extra reward in the autumn with their brilliant red berries. Unfortunately, the cotoneasters, with the exception of *C. serotina*, are decimated by birds in the fruiting season. Some of the prettiest shrubs in autumn are the euonymus and *E. phellomanus* covers itself with coral pink fruits.

In spite of late spring frosts which occasionally damage some of the more tender flowering shrubs, *Hydrangea sargentiana* flowers freely and has grown into a splendid specimen, and *Embothrium coccineum* also flowers well and appears unaffected by climate. The beautiful *Magnolia watsonii* is quite hardy and a large tree of *M. sinensis* makes a striking picture with its sweet-scented drooping flowers.

The first sign of spring in the garden is the appearance in February of the brilliant blue *Iris histrioides* frequently flowering quite undaunted through a covering of snow. The earliest cherry to flower is 'Cheal's Weeping,' which unfailingly smothers itself with its lovely pink blossom. This is quickly followed by *Pyrus atropurpurea* and the brilliant rose-red of the flowers, which come before the leaves, seem to be a signal for the garden to burst into life. Many varieties of narcissus are grown under trees and on banks, and new and good forms are planted in little groups at the path edges. The pink and white of apple, pear and cherry blossom, with groups of Japanese azaleas, and red and white forms of *Primula denticulata* make a charming early effect. Dwarf narcissus, tulip species, *Sanguinaria canadensis*, both single and double, along with anemones make the rock garden bright. From now onwards it is difficult to mention any particular plant which stands out from its neighbour. There is a very fine specimen of *Betula albo-sinensis* var. *septentrionalis* grown from seed received from Dr. Rock in 1926. It casts its parchment-like bark annually and exposes a pink satin-smooth surface of exceptional beauty.

Less spectacular but always interesting is *Olearia virgata* with its feathery drooping branches and *Corokia cotoneaster* and *Ilex perneyi* have made large well shaped bushes. There are many varieties of philadelphus but the handsomest and earliest to flower is *P. delavayi*. The flowers, with their deep purple calyx, are quite conspicuous and the erect habit and delicate perfume are more attractive than most of the hybrids.

The alpine house, like many things, had to be neglected during the war and most of the rare and difficult treasures were planted outside. Several of them still survive and are growing in old stone troughs which sit on the terrace round the house.

Growing against the wall of the house are various cydonias, *Ceanothus veitchianus*, *Viburnum plicatum*, *leptospermum* and *Clethra delavayi*. *Crinum powellii*, peculiarly enough, flowers well in this rather dry position and *Nerine bowdenii* blooms luxuriantly every autumn and its cut flowers are a never ending source of pleasure in the house, where they last for many weeks.

The more difficult androsaces, soldanellas, *Gentiana gilvostrata*, *Meconopsis bella* and *Diapensia abovata* respond well to trough treatment. The alpine house and frames are now used principally for propagation and for protection of the newer introductions until their habits become better known, and fastidious primulas such as the tiny *P. pusilla*, *P. sapphirina*, *P. glabra* and *P. reptans* can be looked after more particularly.

P. dickieana lives somewhat precariously in the open but it grows very happily in the frames where it flowered for the first time in this country in spring 1950.

PETS AND PESTS

HAROLD EPSTEIN, *Larchmont, N. Y.*

IN THE EXPANSION of this woodland garden over a period of years, it was only natural that some portions would receive scant attention. The little help available has been devoted to developing newer areas and plantings. The result has been that some outcrops that were enthusiastically constructed about twenty years ago have received a minimum of attention the past few years.

Such an area consists of a rather steep slope facing northwest with a series of pools amongst the massive stone outcrop. This spot, partially shaded by the house and high oaks, retains moisture and has been a fertile area for many woodland plants. During the past few years, quite a few of these introduced plants, plus others that seeded themselves, started to take over the area and it has been interesting to observe which of these rampant plants could survive the competition.

One of the most vigorous ground covers here has been *Saxifraga sarmentosa* (also known as *S. stolonifera*). This native of China and Japan was introduced in 1815 and is perhaps better known as a good indoor window plant. Many visitors express great surprise to learn that it is quite hardy in this climate. It has spread around the sides of the pools and tenaciously clings with its creeping red stolons to the filmy moss covering the rocks above the water line. It can be a very useful plant for such areas, but must be restricted in its ramping. Occasionally, a severe winter will thin out some of the shallow rooted plants. During the summer months the foot-high flowering stems add a graceful note to these plants.

Incidentally, there is now available a variety of this species named 'tricolor.' The coloring of its foliage is irregularly marked with green, white and red blotches. This is rather tender and destined only as an indoor plant in this climate—it can take very little, if any, frost.

Another very similar species in the same diptera group is *Saxifraga cuscutiformis* which is believed to have been introduced from China. This species resembles a diminutive form of *S. sarmentosa*, its foliage having a finer whitish marbling. In rich soil this plant will produce enlarged leaves which can easily be mistaken for *S. sarmentosa*. After much research, some small rosettes of this plant were obtained, and these were increased to cover several small spots. These were planted in the summer in the same area as *S. sarmentosa* but at a low level. The following spring there was not the slightest evidence of the planting, — it had completely succumbed to the winter. It therefore seems that this must also be considered adaptable for the indoors or a much milder outdoor climate.

Another hardy species in this same group is *Saxifraga veitchiana*. It is another stoloniferous plant introduced from Hupeh, China, with dark green foliage which is less than half the size of the more familiar *S. sarmentosa*. Planted at the base of a moss covered rock, it has spread at a restrained rate and in this position has not unduly encroached on its neighbors.

Returning to the major slope and its competitors of *S. sarmentosa*, we find the most vigorous to be our eastern native, *Polemonium reptans*. Apparently this site is ideal for its growth, for the seedlings have appeared amongst every other plant, on shallow moss and in crevices. Its wide spreading roots are most difficult to extract and the plant has become a pest in this restricted area. It is most effective when in bloom in a mass with its light blue flowers but it must be restrained.

Another competitor striving for life amongst such vigorous neighbors is the small white flowered *Viola blanda*. It has also found the moss around the pools an ideal seed bed and so has spread in all directions. Its rather explosive

seed pods (common with most violets) seem to reach great distances, uphill as well as to lower areas. But the previous competitors have exerted a restraining influence, so that its spread has been reduced. This eastern native is really a pleasing little violet, sweet scented and blooming in early spring.

One woodlander that did not survive the above listed competition is *Asarum europaeum*, the European ginger. It is a contrasting ground cover and is useful primarily for its decorative shiny dark green kidney shaped foliage. Its dull brown flowers, resembling small jugs, are carried beneath the leaves and are not of any decorative value. Although the original patch of this plant was deposed from its hold on this slope, its seedling offspring have appeared in substantial quantities in lower parts of this garden. In fact, many of these have had to be moved, some from amongst a huge clump of *Cypripedium parviflorum* which has prospered in this same spot for almost twenty years. Other asarum seedlings covered a group of *Sanguinaria canadensis fl. pl.* (the double flowered blood root). The latter has also been a very rewarding investment, for a half dozen tubers purchased many years ago have now increased so that there are patches of them at appropriate spots around the garden. This plant is sterile so that all increase is vegetative, — that is, thru division of the roots.

Some years ago, a house plant of the feather ivy (*Hedera helix var. meagheri*) had outgrown its container and so was experimentally planted on a shallow ledge of this slope. It has covered its allotted space and sent runners up the rock slope and amongst lower distant neighbors. It has not been affected by the severest of winters and is a desirable ground cover for smaller areas where a large leaved ivy would be out of scale. But like all its clan it must be restrained and the occasional branches that revert to typical form must be promptly removed.

There is one stone shelf here that originally contained a plant of *Mahonia aquifolium*, surrounded by a mass of *Shortia galacifolia*. Although the ledge was rather shallow, the shortia prospered and was generous in its increase as well as blossoms. The foliage combination with the mahonia was perfect. But after several years the mahonia decided to ramp and sent underground runners thru the shortia planting. These runners were periodically removed, hoping to retain this fine planting of shortia. But this 'root pruning' of the mahonia was merely a form of encouragement, for these runners multiplied and were directed into the smallest of crevices, under huge rocks and into neighboring plantings of *Sarcococca humilis*. It is really beyond control today and while being a desirable plant, has become a full fledged pest. But this mahonia has some puzzling characteristics! In the many years in the garden, it has never exceeded two feet in height, usually less. Its foliage is typical *M. aquifolium*, shiny and usually partially discolored by the winter elements. Each spring it is generous with its fragrant yellow blossoms. Many gifts of the pruned runners have been distributed, and the plant is more handsome and compact in exposed sites. Authorities have disclaimed its being *Mahonia aquifolium* and theorize that it may be a hybrid with *M. repens*. Perhaps next spring some blooming branches will be forwarded to a mahonia authority for determination. Not having the tall spindly habit of the typical *M. aquifolium*, it forms a distinct low ground cover.

There are two areas on the slope, one high and dry, and another low and moist, where there are grouped plants of *Jeffersonia dubia*, the Manchurian relative of our eastern native *J. diphylla*. The former, the more desirable plant, is one of the delights of early spring. It first produces its rounded glaucous leaves of a metallic violet blue tone, each on a delicate stem. When these leaves are but three or four inches high, the hepatica-like bluish flowers open to produce an unforgettable picture. Like so many spring flowers, these last too short a period, particularly if there should be wind and rainfall. But the surprising detail con-

cerning this plant is its facility for producing self-sown seedlings not only at the base of the plants but also in nearby crevices. In fact, the largest plant in this area is a seedling at the side of the stone steps. Do not infer from this self-sowing that the species is considered a pest or ramper, for most of the seedlings are carefully lifted, potted and grown on in the cold-frame. Its ease of growth here is at contrast with several gardeners' complaint of difficulty in retaining the plant.

There are a few other perennials here that are prolific seeders and must be continuously restrained. They are *Corydalis lutea*, *Dicentra eximea* and *Viola striata*. The first two have a facility for casting their seeds into the most unlikely crevices and producing restricted fern-like seedlings. *Viola striata* when in full bloom is always admired by visitors for it has invaded the crevices around a series of stone steps, spilled over into the base and path. The flowers are creamy white with purple veins on the lower petiole. Inasmuch as it is a terrific producer of seed, the upper portions of the plants are immediately cut back after blooming to prevent distribution of the ripening seed. This also assists in preventing the plants from growing too tall.

After reading this sketch of so many vigorous plants, (many falling into the class of pests), an impression may be gained that this garden area must be an overgrown weed-patch. But control of the plants plus a distribution of shrubs as a background, assist in producing a pleasant and interesting shady rock slope. Distributed thru the area are *Rhododendron keiskei* (draped over a pool), several *Rhododendron racemosum* (dwarf form in crevices), *Tsuga canadensis* var. *hussii*, *Tsuga c.* var. *pendula*, as well as others.

In order to reduce maintenance, there has been a gradual tendency to substitute more woody plants for the faster growing herbaceous ones. It is therefore planned to periodically 'reupholster' parts of this western slope and introduce some of the smaller ericaceous plants, particularly dwarf rhododendron species and hybrids. In this process the frame-work, (that is, the stones) will not be moved or affected for it has been substantially constructed. Only the soil and plants will be removed and replaced.

There are some other parts of this challenging garden that contain other unusual pets and pests which will be discussed in a succeeding account.

DWARF ASTILBES FOR SUMMER INTEREST

GRACE F. BABB, *Portland, Maine*

THE DWARF *Astilbe* 'Fanal' and *A. simplicifolia* drew a lot of attention and admiration in the garden last summer. Neither one is new to gardens, but they are not as commonly grown as they deserve. 'Fanal' is the more showy, of course, with its rich red spikes over a long period in early summer. It blooms during June and July here, beginning slightly later than the other dwarf pink and white astilbes, and lasting much longer. The pale spikes of the others look faded rather quickly, but the dark ones of 'Fanal' hold their color effect, and are even interesting for dry bouquets. The color was especially good last summer, and made a bright picture in front of clumps of old-fashioned perennial yellow foxgloves with their heavy gray-green foliage and rich cream bells.

Astilbe simplicifolia is a much airier plant in bloom, with twelve to fifteen inch stems of pale pink flowerettes, not so tightly packed on the stems as those of the other kinds. The finely cut foliage is very similar, often with red or rose tints on stems and leaves. The blooming period is later, beginning in early August just as 'Fanal' is going by, and lasting until September. A group of these varied astilbes will give continuous color interest for the entire summer.

SIDELIGHTS ON SOME SEEDS

BERNARD HARKNESS, *Rochester, N. Y.*

THE FACT THAT over ninety percent of my seed contributions stem generically from the first four letters of the alphabet indicates to me that I am a more curious gardener than I had suspected. Because the majority of the botanic garden seed lists are alphabetical anything unusual towards the beginning I put down to try and before long the list is lengthy enough and the rest of the list is just skimmed over. A reform must be made. This year I will read all the lists backwards.

It is all too evident that our Seed Exchange List now includes a great many names not to be found in the standard references. Consequently, I offer here what knowledge I have concerning the plants represented by my seed collecting that are not fully described in Hortus II.

Allium ampeloprasum atroviolaceum. See Gray's Manual, 8th ed., where the Yorktown Onion is now recorded as naturalized in York County, Virginia. See, also, Louise Fisher's "An Eighteenth-Century Garland" for the use made of the Yorktown Onion in the Williamsburg decorations. Save for the purple inflorescence of this form, the white-flowered type is an uninteresting wild garlic from European vineyards, according to its name; a summer-dormant bulb not too happy except in a hot, dry spot in light soil.

Allium paniculatum longispatham. Except for the striking spathe development, this form of a common European species is not of great ornamental value. Its flowers of tan with a rosy stripe are so nearly neutral in color as to require close-hand inspection to enjoy. The stems are 18 in. and over and the leaves are sparse.

Allysum fischerianum. With flowers of vivid greenish yellow (Nickerson Fan) on a low plant, this very hardy Russian has some value even though its flowering coincides with Basket-of-Gold. The stems and small leaves are thickly set with stellate hairs giving the plant a rough texture and hoary effect. Farrer says it becomes almost shrubby.

Aralia cachemirica. Only as a bold background plant would this araliad ever be associated with the rock garden and it is heralded here only to record the fact that the Hortus II note on its hardiness must now be modified by a long-established plant in the Brooklyn Botanic Garden and a three-year tenure in Rochester.

Arisaema amurense. Only a keen eye would note that this quite unexceptional Jack has the foliage of our Green Dragon with the flowers very like our native Jacks.

Aster amellus 'SONNENWENDE.' Trials of a couple amellus varieties indicate that they come reasonably true to seed. SONNENWENDE is a summer-blooming selection, which we had from Wageningen, Holland.

Digialis fulva. This is a favorite perennial foxglove. I have not seen a description later than Don's Gardening Dictionary of 1831, at which time its origin was unknown and hybridity was postulated. In a growing season as was 1958 the flower stem never stops elongating with a flowering tip all season long.

Digitalis mertonensis. Though no more of a perennial than common foxglove, this stable result of a flirtation with yellow foxglove makes the real contribution of a mellow rose tapestry tint to the flower border.

Digitalis parviflora. Something of an oddity with its predominately brown flowers, it is somewhat later in the succession of foxglove flowering and under the hot July sun is easier on the eye than more flashy colors.

Digitalis sp. Peter Davis's orange-flowered foxglove, originally distributed by our editor, is still so listed because I cannot reconcile the first published description (*Journal of the Royal Horticultural Society*, April 1949) of *D. davisiana* where the whole plant and the flowers especially are related to *D. ambigua*, to this plant.

Dracocephalum renatii. The particular pleasure of entertaining a Moroccan plant in a New York State garden certainly makes an objective evaluation of its ornamental worth impossible. Fortunately, you can see in *Baileya*, March 1957, a good drawing and decide whether this white-flowering, gray-leaved plant is to your liking.

Dracocephalum rupestre. In the same issue of *Baileya*, the discussion of the large-flowered group of Dragonheads and the drawing leave little doubt that this is one of the best of the group. It makes a very attractive early summer showing.

Serratula lycopifolia. Only a beginning has been made in a study of the sawworts. This is a Russian species with 30 inch flower stems, bare of leaves for half their length, in mid-June making a pleasant show of sweet-sultan like flowers, light reddish-purple, an inch and a half across. The basal leaves have an interesting pattern of lobing decreasing to mere dentation. Seed distributed last year as *S. gmelini*, with more study of the group, proves to be the four foot border plant, *S. coronata*.

Stachys guyoniana. Distributed as this species by the Cambridge, Eng., Botanic Garden. No description or listing has been found. Of interest to those liking gray-green plants, it has two inch leaves and small flower spikes early in summer.

PHLOX ADSURGENS

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

IT IS AMAZING how little one can find in print about *Phlox adsurgens*, considering that it is native to our country over at least as great an area as that occupied by *Iris tenax*. Most of what one reads is highly controversial and generally indicates *P. adsurgens* to be extremely difficult.

A number of years ago I saw a phlox blooming in heavy fir timber, which I thought was *P. adsurgens*, but I did not know much about identifying plants, so cannot be sure. It was in dense shade under rotting logs, with ferns and *Linnaea borealis*.

I remembered this environment when I was able to secure plants from Carl English in Seattle two years ago. Two of these plants were set under oak trees in leafy soil and watered moderately. They are alive, but have not grown or bloomed. For the third, I got a load of decomposed fir needles from the woods and filled an area on the north side of my wash house next to a raised board walk. This is a spot I water every day if dry, and is a nursing bed for primroses and small shade-loving shrubs. This third plant grew luxuriantly and had lots of runners with roots by last fall. I severed three of these and planted them in very old fir sawdust mixed with compost. These, too, are fine plants now.

The large original plant bloomed heavily this spring, and the shiny green leaves are lovely and make a real mat. The plant is already in shade (north side of a building), but seems to want even more, as the runners are much more abundant on the side toward the walk and are creeping underneath it. The walk is about six inches above ground level. The plant may go dormant in summer in the wild, but it certainly does not object to the heavy summer watering it has received. I believe the soil composition is a large factor in growing it successfully.

NOTES ON COLLECTED SEEDS

CRW

OF THE SEEDS which I collected in the Rockies and Great Basin during the past summer, a considerable variety is being made available to our members by way of the Seed Exchange. Because of the extreme drought, many plants were far beyond the stage where they could be pressed, and identifications of others have not yet been received. Some brief notes seem therefore to be in order, so that applicants for seed will know what they are requesting.

Allium sp. was found in barren sun-baked soil along the roadside in the upper part of Hoback Canyon in western Wyoming, at about 8000 feet. Bulbs grew only a couple of inches beneath the surface, singly, never in clumps, and had only two or three slender leaves shorter than the six-inch stems which bore remains of flowers apparently a bright rose-purple. This was the only allium seen on the trip, except for a white-flowered floppet too dull to merit more than a glance.

Androsace sp. is, like all our American species, either a winter annual or a biennial; to the casual eye they differ only in size. This one, growing in turf on a limestone ridge at 11000 feet in central Utah, made basal rosettes an inch across, with starry flowers borne in great profusion on two-inch stems. While not a showy plant, it has considerable charm, and once introduced to a garden, will maintain itself by self-sowing conservatively.

Anemone globosa (?), on the slopes of Mt. Helena in central Montana, at about 4000 feet, was so stalwart, fully knee-high, that I feel forced to question the name. Its flowers are presumably dull red. Similar in appearance, but a much smaller plant, usually only six to eight inches high, is *A. lithophila* from high limestone ridges and cliffs in the Wasatch Mountains of Utah. The seed being distributed was collected from a stand bearing a few belated flowers of creamy yellow; a deep red form collected elsewhere seems to have been lost — or perhaps, being concerned primarily with greater treasures growing with it, I merely meant to collect it and passed it by.

Aquilegia caerulea was harvested from plants on steep rock slides above Leadville, Colorado, at an elevation of somewhere between 12000 and 13000 feet. At alpine heights, it still made robust growth, and even in drought few of the plants were less than a foot high. A few belated flowers were typically blue and white.

Aquilegia jonesii is not always inclined to flower freely, even on its native limestone hills in central Montana, but this year every plant was loaded with capsules, most of them not ripe, and a Forest Service employee who agreed to collect more seed later has not fulfilled his promise, so that the harvest is very small.

So also is that of *Aquilegia scopulorum* from desert heights in southern Nevada, and for the same reason. Of all the known stations for this, the finest of our dwarf species, only in this one place does it show much variation in color. The few plants still in flower included cardinal (not the brilliant scarlet that I had hoped for), pure pink, rich purple, and yellow, as well as the usual blue and white. It is a more dwarf plant than other alpine forms of this species, remaining only two inches high in my garden; but whether it was my misfortune eleven years ago, when no plants were in bloom, to collect only poor forms, or whether they lose their brilliance at lower altitudes, flowers in my garden have always been in soft pastel shades.

Utterly different from the alpine form of *A. scopulorum* var. *calcaea* which I brought into cultivation twenty years ago is the plant bearing the same name from much lower altitudes in the vicinity of Bryce Canyon, where it grows on slides of brilliant red ferruginous limestone. This distinct form, the most brilliant columbine I have ever seen, grows not less than a foot high, makes a fluffy basal rosette of light blue (not blue-green) leaves, and bears flowers no larger than the alpine ones, but of an intense deep blue. Occasionally the cup is paler, but most flowers are uniform in color. In spite of the drought, many plants were blooming for the second time, having shed most of their seed; only long search, under a broiling sun, yielded an adequate harvest.

Almost the only flower to be seen at lower elevations of eastern Nevada in mid-August was the great prickly poppy, *Argemone hispida*. The three-foot, somewhat thistle-like plants were topped with enormous white flowers fully four inches across, a truly spectacular display. Whether it will even tolerate regions of considerable rainfall I do not know, but it is well worth a trial.

Arnica cordifolia is usually a rather coarse woodlander, a foot or more in height, with relatively large yellow sunflowers. Another species was harvested at alpine elevations near Leadville, but I have not the slightest recollection of its appearance.

In a sunny level pasture south of Buffalo, Wyoming, grew a delightful little annual that I have listed as *Aster* sp., although I feel certain that more sophisticated taxonomists will place it in another genus. No more than six inches high, with rather finely divided foliage, it bore a profusion of deep violet daisies an inch across. It should be valuable for summer bloom in a hot dry place.

The astraguli, with handsome foliage and fantastic seed-pods, intrigue me, yet so far they have found little favor with gardeners, perhaps because they are anything but easy to grow in a humid climate. I suspect most of them of being among the few plants that really insist on an alkaline soil. One of the most striking, listed as #22, was found several times, always as isolated plants, at about 6000 feet in eastern Nevada. It formed mats, rarely almost two feet across, of pinnately divided silky blue-grey leaves two or three inches long, completely covered with seedpods like inch-long white woolly cocoons. #25 is, I believe, *Astragalus tridactylicus*, found on dry plains in southern Wyoming, a hard flat "bun" sometimes twelve inches across, topped with tiny trifoliate leaves, blue-silver and silky. The pods, each with a single seed, were buried among the leaves; the little pea-flowers are, I believe, soft lavender. To grow this well will be a formidable problem.

Baileya multiradiata has attained the distinction of appearing in an otherwise conventional seed list, but I have never heard of anyone in the East attempting it, and I am exceedingly curious to know whether it is at all possible. For it is invariably, as I have found it, a plant of the driest deserts, where even the argemone does not venture. It makes a mound of silvery, finely cut leaves, usually a foot or so high, dotted with anthemis-like flower heads.

Castillejas are plants for the experimenter: in spite of their reputed parasitism, one occasionally comes on isolated plants in scree, without visible hosts, or clumps many feet across, which could hardly be supported by any neighboring plant. Frequently, however, they grow in close association with sagebrush and shrubby willows, so that it might be well to attempt sowing the seed close to members of these genera. Three lots were sent to the Exchange: one, only six inches high, with dense spikes of broad creamy bracts, growing among grasses and flowering plants at around 12000 feet near Leadville; another, red, foot-high, from Ely, Nevada; the third, likewise foot-high, bright yellow, grew close to

the roots of sage-brush at the fossil fish beds near Kemmerer, Wyoming, at about 7000 feet.

I am uncertain what was sent to the seed exchange under the name of *Cyrtoryncha ranunculina*: it should be a buttercup six inches or so in height, with a cyme of yellow flowers. But the seeds look more like those of a potentilla, and I can only fear that I absent-mindedly gathered seed from the wrong plants, while my eyes searched in vain for a phlox that I had been told would be found in this locality.

Dodecatheons were, surprisingly, completely invisible throughout the trip, except in Nevada. A saline flat in Railroad Valley was crowded with dried-up plants of a species twelve to fifteen inches high, still loaded with seed. My friend, Mrs. James Sharp, who is collecting natives of the region, told me that the flowers are purple, and that a botanist identified it as *D. pauciflorum*; I doubt, however, that it is that species. Not far away, in a snow-choked canyon on Troy Peak, I harvested a form of *D. jeffreyi*, growing in clumps a foot or more across, with leaves nearly a foot long, suggestive of those of *Primula parryi*, topped with clusters of pale pink shooting-stars. On Charleston Peak, even on dry ridges almost at timberline, grows *D. jeffreyi redolens*, and the Troy Peak collection may represent the same variety.

Elephantella groenlandica is the most spectacular of our louseworts, with feathered leaves and spikes of rose-purple "elephant-heads," in what in a less arid season would have been sunny bogs, just above timberline in the Snowy Range of southeastern Wyoming.

Erigerons and penstemons, because they are easy to harvest and usually generous with seed, were collected in greater number than any other genera. But while the penstemons have a society that does homage even to the duds of the race, the poor erigerons, equally showy and far less temperamental, have few admirers. Only our venturesome secretary has expressed any real interest in them, and of the twenty-eight seed lots, it seemed unwise to send more than a few to the exchange. Yet, with the possible exception of two or three desert species not seen in bloom, all are good to very good, with daisies of pale blue, lavender, violet, or white, on plants usually only one to four inches high. Above Leadville, one stalwart of eight inches (#78) was harvested, for it had magnificent lavender heads fully two inches across. Here are plants quick to germinate, usually easy to grow, that are well worth better acquaintance.

I am never certain, when I gather the papery heads of eriogonums, whether they contain seed or not. Two forms were sent to the exchange: the first, rather widely distributed, has basal rosettes of rusty green two-inch leaves and yellow heads that eventually turn russet, on naked foot-high stems; the second lot is either a mixture or an extremely variable species, for most of the plants had obtuse bluish leaves, yet an occasional one would be dull green, and some leaves varied in shape, while the yellow heads were borne on eight inch stems. This lot came from a moderately high pass between Loveland, Colorado, and Laramie, Wyoming.

Erythronium parviflorum, in spite of its name, has yellow flowers larger than those of our eastern native, on foot-high stems, and favors sunny banks that often become very dry in mid-summer. The seed offered was collected at 10000 feet on a limestone ridge in the Wasatch Mountains of central Utah.

Here and there at moderate elevations in central Montana I saw a gaillardia which delighted me, although I detest the garden forms. Often two feet high, but rather graceful, *G. aristata* had large flowers whose rays were pure yellow, or, rarely, cream, with brownish disk.

Oenotheras, in this dry season, were seen only a couple of times, except *O. caespitosa*, which was collected in five different localities, and varied from single rosettes perhaps six inches across to husky mats four times that size. It will be interesting to note whether these variations are maintained under cultivation. *O. caespitosa* var. *marginata* grows along the road toward the upper end of Kyle Canyon above Las Vegas, and has grey leaves with wavy margins. *Oe. caespitosa* var. *crinita* is, in my experience, an extremely rare plant: in 1947 I saw a single plant on Charleston Peak, which was no longer there this past summer, but thousands of feet higher, clinging to sheer cliffs, I found two specimens. These are less impressive than those from which seed was collected, on a steep and sunny lime slide near Ely, Nevada, which I first found in 1946. Of the original colony there remain perhaps six ancient specimens, and no young plants have developed to carry on the family. These plants are now flattish mats or humped domes about a foot and a half across, composed of a multitude of two-inch rosettes, grey and silky. The flowers are rather small, about an inch and a half across, and while I have never seen them as they opened, even before sunrise they were a rich pink. Fortunately this season, on my third attempt, I collected a fair amount of seed, and hope that the plant can be preserved in cultivation, if not in the wild.

Over forty lots of penstemon seed were harvested, and while all have been sent to the seed exchange of the Penstemon Society, only the more showy ones which could be named (except for one group) with certainty, have been entrusted to Dr. Kruckeberg and his diligent co-workers. *P. arenicola* is a rare blue-flowered species, closely related to better-known *P. nitidus*, from dry plains of southern Wyoming; it grows no more than six inches high, with (I presume, for I saw only dessicated plants) flowers of a startling pure blue. *P. pachyphyllus* ssp. *congestus* is closely related, but a stalwart of three feet, with long spikes crowded with good-sized flowers of medium blue. *P. aridus*, a dwarf of six inches, is perhaps the best of the small-flowered but brilliant blue Humiles subsection, while *P. humilis* ssp. *brevifolius* is smaller, much rarer, but less showy, from rock outcrops on Mt. Timpanogos above Provo, Utah. Others of this section, mostly unidentified, seem unworthy of general distribution. The Glabri—to use the older and more familiar sectional name—embrace the easiest of the really showy species, and of these several are available. The smallest, and rarest, is *P. paysoniorum*, and it will probably prove the most difficult, for it came from dry slopes in southern Wyoming, near the fossil fish beds. It grows no more than eight inches in length, and the widely flaring blue flowers are three-quarters of an inch in length. *P. garrettii*, which grows exclusively on cones built up by mineral springs in northeastern Utah, nevertheless has given a good account of itself in several gardens; it is a foot or fifteen inches high, with long spikes rather crowded with good-sized flowers of vivid blue. Although I had met the plant before, I had never seen it in bloom until this season, and was vastly impressed by its beauty. A foot-high plant that is variable, but always spectacular, *P. speciosus*, was found in open places near timberline in the Snake Range of eastern Nevada. One of the least-known sections, at least to gardeners, is Aurator, consisting of small desert plants with flowers that are usually enormous for the plant, mostly, I believe, in shades of lavender. Of them, only *P. eriantherus* has been available, from Claude A. Barr; a plant of this species has flowered for three seasons in my garden, so the group is far from intractable. Unfortunately, my collections were made at places where the ranges of several similar species overlap, and the plants were so withered by the extreme drought that I could not distinguish among them: when I cleaned the seeds, I recognised among them some of *P. confusus*, of a different section, but unrecognizable after three months of

drought. The seeds should include some or all of *PP. concinnus* (or *nanus*?), *miser*, and *dolius*. *P. clutei*, the least overpowering of the Spectabiles, was grown for some years by Mrs. Henry, so is possible in the east. Three-foot stems bearing narrowly triangular toothed grey leaves are topped by large flaring flowers of a most attractive blend of rose and orange. *P. deustus* is represented by its distinct southern form, with entire leaves rather than the more familiar holly-like ones. It is a small yellow-grey shrub, only about six inches high in southern Nevada, and its small flowers are yellowish—a controversial plant, which a few persons admire and others detest. I rather like it.

Phacelia sericea was high on the list of desired plants, and almost eluded me, for I could not find it at all in the Snowy Range where years ago I harvested seed of it, above Leadville the plants had dried up without seeding, and only at Loveland Pass, the last alpine elevation that we visited, were there a few plants which had matured seed, although even there most had blighted. After all the trouble to find it, so far not one of my correspondents has requested seed of it. I hope the Society will be more appreciative of its charms: a basal rosette of much divided silvery-silky leaves not over four inches long, with a stem that may be as much as a foot, thickly set with smallish violet flowers; a lovely plant, not difficult to flower once in the garden, although unlikely to live very long. More popular on the list of requests is an unnamed species found in Hoback Canyon, across the road from the allium. This also has finely divided leaves, but so dust-covered that their color could not be determined. The large and obviously perennial root sends up a number of foot-high stems, densely set with capsules. Not a corolla remained, but I have a hunch that the flowers will be attractive.

Phlox were abundant, but their seeds were not: of the seven kinds collected, two yielded only two seeds apiece, another lot was somehow lost, and the only one available for general distribution is the lovely species from above timberline in the Snowy Range, which makes tufts no more than an inch high, covered with flowers that vary from lavender to deep violet—the only alpine species I have met whose flowers were not mostly white. I suspect it of being *Phlox caespitosa* v. *pulvinata*, but shall not argue the point with Dr. Wherry.

Physarias baffle me: they look distinct till I attempt to identify them by means of Rydberg's key, and then I invariably end up with *P. didymocarpa*. The seeds sent to the exchange I believe are really of that species, whatever the other small lots—one consisting of a single seed—may be. The plants from which the seeds were taken grew on a sunny rock slide in a narrow canyon in central Utah, and formed rosettes of grey leaves at least eight inches across, buried under a multitude of inch-wide papery balloons, each of which, to my disgust, contained no more than two seeds, so that a large sack of balloons gave only a pinch of seed. The flowers, bright yellow, are attractive, and the plant is not difficult, though short-lived in the garden, and I believe in the wild.

The taller polemoniums, and even the dwarf group around *P. pulcherrimum*, usually common, were notably absent in this dry season. Fortunately some hopeless-looking stalks of *P. viscosum*, the best of all, contained a surprising amount of good seed. This is the one species really worth growing, a true alpine, usually found on rock slides, though occasionally in soil. It is caespitose, making a tuft of rosettes that in favorable places may be more than a foot wide. The leaves come directly from the base, erect (more or less) with whorls of minute leaflets. The flowers are in a rather compact head, widely flaring trumpets. There are two lots of seed: one, from the Snowy Range, was seen in full bloom, and represents one of the finest forms of the species, with large flowers of deep blue; the other, from around Leadville, is to judge from wilted corollas, much lighter

in color, occasionally whitish. *P. mellitum* is, according to the Davidson monograph, synonymous with *P. viscosum* (as is also *P. confertum*), but as I know it, from only two localities, it is a rare plant (which Mrs. Marriage never found) of much lower altitudes, with less erect leaves, and flowers that are creamy or pale yellow. These come quickly and profusely from seed, and are not at all difficult to flower once, but regardless of treatment, every plant I have grown has died immediately after flowering, of course without setting seed; yet in the mountains they are clearly enduring perennials.

Ranunculus adoneus is perhaps the finest of our buttercups, a high alpine of lime screes with finely divided leaves and large flowers—yellow of course; there are no white species in American mountains, in spite of Clay. *R. adoneus* starts blooming as the snow goes, at a negligible height, but by the time the seed is shed green, it sometimes attains six inches.

After some hours wandering among a spate of senecios above Leadville, debating whether each was worth garden space, I suddenly paused and mumbled to the marmots, "Now there's a senecio really worth collecting." I looked again and recognised *Rydbergia grandiflora*, which I had not seen for twelve years. The picture in Clay is somewhat deceptive: the finely cut shaggy grey leaves and astonishingly large yellow sunflower are true to life, but the plant rarely contents itself by sending up a single stem, growing rather in a clump of a half-dozen or more, and may vary from three inches to twelve in height. It may be an extremely difficult plant, for certainly it is barely known in cultivation: that grand British gardener, C. T. Musgrave, wrote that when he took to a R.H.S. show a plant he had grown from seed I had sent him, not one of the experts there could name it.

Tanacetum compactum may belong to an undistinguished family, yet it is a real treasure, a rare endemic of the Charleston Mountains of southern Nevada, where I found it only once on the highest slides. Its dead-white leaves, finely cut as the most delicate lace, grow in a small tuft, above which rise little yellow knobs to a height of two inches. I'd swear that they also had white rays, yet there was not a trace of a ray on any of my herbarium material, nor does the description mention any.

Townsendia montana I have collected often on earlier trips, and have flowered here, yet the plant remains virtually unknown. It is a true alpine, rarely in one place descending to subalpine levels. The alpine form makes a small tuft of one to several rosettes, each not more than an inch across, upon which sit almost stemless daisies twice the size of the rosette, so that a plant looks like a leafless cluster of bloom. The rays are either pure white or pinkish, deeper on the reverse. A subalpine form is inclined to have longer stems, to three inches at times, and flowers of deep violet. These are lime-loving scree plants, good perennials. Another species was collected along an irrigation ditch in western Wyoming, where it rejoiced in an adequate supply of water, so that it may be more amenable to the wet East than most species. It likewise had a small basal rosette, from which sprang a number of almost prostrate two-inch stems, each bearing an inch-wide daisy of rich pink.

Trollius albiflorus, the white globe-flower, should be anything but an unusual plant in the mountains, yet I never encountered it before this summer, and then only in ripe seed, so that I cannot give an opinion as to its desirability. It grew foot-high on the banks of what would normally have been a small creek, with *Caltha leptosepala* and *Primula parryi* for companions.

A foot-high *Viorna* species growing along the roadside near Buffalo, Wyoming, I have referred to in print as shrubby. It is, of course, herbaceous, and presumably has purple urn-shaped flowers—and is clematis to most people.

A most attractive aster, with flowers at least two inches across, grew only six inches high in the parched alpine meadows of the Snowy Range, and if it will stay that dwarf under wetter conditions will be a most valuable late-flowering addition to our gardens. Most plants had heads with blue-purple rays, but the seeds were collected from one with pure rose flowers, and it is to be hoped that at least a few of the seedlings will show the color of their parent.

NOTES AND COMMENTS

BETTY JANE HAYWARD, *Scarborough, Maine*

Deinanthé bifida from Japan, a member of the family Saxifragaceae, is a plant best suited to the wild garden. While it can be raised from seed, the growth is slow, the creeping roots spread slowly, and several seasons may pass before the plants reach the size and strength to produce their interesting blossoms.

In spring the stems thrust up from the moist earth, unfolding the large crinkled leaves which are nearly eight inches long; many, but not all of them, divide at the tip, whence its specific name. The flowers come in late summer, in clusters; they are white with a waxen texture, like giant pyrola blossoms. When they fade and fall a large seed vessel filled with powdery pale seed develops.

At the first hint of frost the leaves wither and blacken. However, the root is very hardy and faithfully sends up new growth each springtime. Although belonging to a family of lime lovers, here they are growing in company with maidenhair fern, *Trillium grandiflorum* etc., in the shade beneath Canadian hemlocks, where the soil surely must be acid.

Ranunculus crenatus. Ranunculi are not among the easiest of plants to grow and keep. Seed is slow to germinate, and when it does, the plants may refuse to grow in the choice spots selected for them.

Success with *R. crenatus* has been a happy surprise. A colony of the tiny white buttercups from the mountains of Central Europe grew and blossomed in choice company on one of the low walls this past summer. The dark leaves are round and deeply scalloped. The petioles are very short, so that the leaves lie out flat with the fine white flowers rising just above them.

Surprisingly soon after the flowers had faded the seeds were ripe and falling while still green in color. At once they were planted in one of the frames where other slow kinds were lying dormant. A few weeks later it was a pleasant surprise to find the bright green leaves opening. The little plants grew fast and before autumn were nearly as large as their parents. This behavior points up the fact that some species are propagated best from really fresh seed.

Although the western United States is the habitat of many fine mertensias, few are found in gardens here in the East. Familiar and admired everywhere is *M. virginica*, often called Virginia bluebell. Its place is in the woodland garden or shady border rather than the rock garden.

M. echioides from the Himalayas is a fine species of dwarf habit, six inches at the most. The leaves are slightly silvered, and resemble those of forget-me-nots, though narrower. The flower stems curve up, and in midsummer unfold many blossoms of deep sapphire blue. Here a good colony is growing on a little slope toward the east. The plant, like most mertensias, appreciates the cooler aspects. I expect that when the flowers become more numerous, seeds will be plentiful. Propagation by division is recommended also.

M. maritima is one I have longed to possess; its growing far to the north, even to the Arctic Circle, is a factor that doubtless intrigued me. Last year a

group of five perished to a plant because of being planted in a low, damp spot. Being fortunate enough to get it once more from seed, I made a wiser choice of location, this time higher, drier, and sunny. The wide glaucous leaves, faintly tinged bluish, are lovely in themselves. The flowers are the typical tender blue and pink of many other *mertensias*. Happy will be the day when blossoms will furnish more seeds, to insure its continuance in the garden. How indebted we are to generous contributors to the Seed Exchanges, that enable us to realize success after disappointing failure.

Saussurea stella grows far, far away on the opposite side of the world, in New Zealand in the Southern Hemisphere. I write in some confidence regarding it, although it has yet to produce the strange thistle blossoms of red-purple. All the plants came through the Maine winter safely. The narrow, grooved foliage lies flat, until at time of blossoming the base of the leaves widens, becoming red-purple like the flower. The foliage at present grows in a swirling pinwheel fashion — surely an interesting plant to grow and to have, and one that is said to have some claim to beauty as well.

JOTTINGS IN THE FALL OF 1958

DORETTA KLABER, *Quakertown, Pa.*

ONE REALLY SHOULD NOT DISCUSS any flowers until they have grown in one's garden for at least two years. So, here I go again: *Dicranostygmia lactucoides*, that I was so enthusiastic over last year, didn't live over the winter. Evidently it is biennial here, so that is that for *D. l.*

Anemone sylvestris has at last taken hold. I was delighted with the inch wide white flowers, cupped in bad weather, but opening out happily when the sun shone. It grows six to eight inches high, and contrary to some anemones, the leaves stay above ground all summer.

I've probably mentioned *Aster kumleinii* before, as I've had it for years. However, I've been so grateful for it this summer and fall that it deserves another word of praise. It usually has a drooping habit, but some plants will stand erect to twelve inches or so, just covered with their cloud of good pink or blue daisies. It gives color when color is needed.

I've found out why some of my hardy cyclamen disappear. My biggest corm, three inches wide, that has been making foot-wide plants, was sitting on top of the ground neatly eaten out, only the shell left by the villainous squirrels. It was too heavy for them to carry off, so they just sat down and had a party. I've put sharp pieces of tin around the ones that are left, and have strewn some poison besides, so hope they'll keep to the hickory nuts and maple keys . . . they like the latter and who would begrudge them those?

I think that the dwarf pink *Dianthus* 'Tiny Rubies,' with its little flat of grey leaves and small deep pink flowers is over-rated. It is a pleasing enough plant but cannot compare with some of the small species, like *Dianthus neglectus*.

Campanula sarmentosa disappointed me. It took two years to come into bloom, and then had rather weak stems of a foot or so, with very pale lavender flowers. Its clump of grey leaves promised more than that.

A word about *Erica darleyensis*: it has been most satisfactory, doesn't seem to mind my soil (on the limy side, but of course I added peat and sand), bloomed from late winter well into spring, and is all set to go ahead again, just covered with buds. It starts blooming just when you think you can't stand any more winter, a drink in the desert.

All the Himalayan fall-blooming gentians have been showing flowers, not many at a time, but one is so grateful that they all lived over the past awful winter and spring, and one marvels anew at their colors. They are now growing in a bed at the edge of the woods, with peat and sand added to their soil, plenty of stone chips mixed in, and a heavy mulching of the said chips their only protection from the elements.

Have I mentioned *Hieraceum bombycinum*? It is a really good hawkweed, believe it or not. The very grey, very hairy foliage makes neat mats which have not spread much, and the clear yellow dandelionish flowers are on four inch stems, most attractive.

Jasione perennis filled the summer with its soft blue balls of flowers on 12 to 15 inch stems, which branch and keep on blooming if you have time to cut off the fading flowers.

Lotus corniculatus grows a bit lushly with its typical pea foliage in a good green, and bright yellow pea flowers most of the summer. It should be planted as it is along the Pennsylvania Turnpike, on dry banks in sun, with an occasional shearing.

Potentilla argrophylla atrosanguinea, which has bright red flowers on foot high stems, over silver-edged and lined leaves, has now come up with some recently discovered varieties. Seedlings are up, and should have a wide range of color. The varied form has only a collection number to date.

I have great hopes for *Primula fauriae alba*. It has made clumps of leaves somewhat like those of *P. farinosa* (it is one of that group), a bit smoother and flatter, with yellow meal instead of white on the reverse, and will add welcome white flowers to the pinks and lavenders of *PP. farinosa* and *frondosa*. The clumps look sturdy.

The encrusted saxifrages have been as lovely as ever, winter and summer. They vary so in size of rosette, and the smaller they are, the more enchanting. They are not difficult from seed, planted in January or February as all my seeds are. Whether they demand the freezing they get, I'm not sure, but they seem to thrive on it. They are all so dependably hardy.

Senecio speciosus, about which there was some question in the BULLETIN, bloomed its first year from seed, and all the plants lived over the winter, some in most uncongenial spots. It bloomed profusely again this past summer and made divisible clumps. The purple daisies match *Thymus coccineus* in color, a good bright purple, near magenta, but so clean and clear with varying tones on the same plant. I like it.

Silene maritima islandica is an unusual and surprising plant. It has small grey foliage, creeping ever so slowly, then white flowers with big baggy calyces close upon the plant. It is really charming.

Celsia acaulis gave me a surprise too. Planted in winter, the rosettes of rugose leaves were intriguing. One day in spring I found some bright yellow flowers strewn over them and looked to see where they had blown from. They were the celsia's own flowers, close upon the rosettes, with a brush of orange stamens emphasizing the clear yellow. I hope they are going to prove perennial, or at least to seed around like their relative the moth-mullein. The flowers are fleeting, but more keep opening—a real find.

Erigeron ursinus has shown a flower or two this first year from seed. It makes clumps of rather soft green leaves and has lavender daisies on six inch stems, very nice, but not as good as some of the more dwarf species.

CHILEAN NOTES — VI

CRW

WITH THE ACCOUNT OF ONE MORE TRIP into the Cordillera these notes, extended far beyond my original intent, must be brought to a close.

From Illapel we drove eastward to Salamanca, where we had breakfast and took rooms at the Hotel Royal, an imposing building which once must have lived up to its name, but now was rather in disrepair. The day was spent in exploring by car and horse, but the region was dry and interesting plants were few: a small mutisia with yellow rays washed brownish red on the reverse, which wandered through small bushes, and a pink amaryllid, perhaps the same placea that had delighted me at Fray Jorge. I seem to recall an attractive and distinct alstroemeria also, but there is no mention of one in my notes.

Up at six the next morning, again we went east, this time forty kilometers to Cuncumén, through a wide valley, well-tilled and dotted with weeping willows and Lombardy poplars, bounded by high hills covered with really green shrubs, and to the east, a mountain wall hazy in the morning sunlight—probably the outlying flanks of Mercedario, perhaps the second highest peak in the Western Hemisphere, and still unviolated by the climber. A sharp turn brought us into the courtyard at Cuncumén, the estate of a Chilean senator: to our east the house, faced with a high piazza; to the south a small garden of trees beyond which were several buildings; to the west, a cabin, part of which served as headquarters for the local carabinieri; and to the north, far away, high snow-streaked peaks. The owner and his son were both away, but we were greeted by the manager, who looked more Scottish than Spanish, and invited into the house for breakfast, where we were served for the first (and thank goodness, in my experience the only) time a delicacy which had been praised in my high school Spanish texts, "huevos pasados por agua"; the directions implied by the name must have been followed literally, and the eggs no more than dipped in hot water, for only the outermost white had coagulated. When we had eaten, we found the horses saddled and waiting, and with one of the men of the estate for guide, we rode down the street of the village and across an irrigation ditch just below a dam built of rocks in such a way that it looked like a natural waterfall, then along a wide dusty road beside the canal, eventually turning onto a narrow trail up a valley. After an hour on trails winding along hillsides, we started climbing in earnest up a slope that grew more and more steep, until finally the switchbacks were no more than fifteen or twenty feet long. After a time the closely grazed slope grew less steep, and was dotted with plants of *Calceolaria arachnoidea*, and a few mutisias with deep pink flowers. As soon as we had crossed a rushing torrent, the slope began to have more interesting plants: first *Argyria huidobriana*, in a much finer form than at Cuesta de Hornos, with broader leaflets, rather fleshy, but suggesting those of an erodium, barely clearing the ground, flowers veined and flecked rather than mottled, in yellow, through orange, to rather dull red — one of the loveliest of plants, rivalling the cruckshanksias in my affections.

We zigzagged up toward a tower of rocks behind which rose two rocky buttress-peaks with snow on them. To the north towered a long snowy ridge, and nearer, the serene beauty of La Placeta rose coneshaped, jagged cliff above jagged cliff, their crevices filled with snow. Just before we reached the tower, a shout from Rodolfo made me tumble off the horse to seize a viola, a tight rosette of tiny closely imbricated spatulate leaves, bronzy, almost reddish, netted with white veins and edged with white hairs, the whole plant from one to three inches across. The little violet flowers, no more than a quarter-inch across, were reddish-

purple, just a shade lighter than those of *V. elegantula*. I stuffed several of the most promising in my pocket, in the hope that they might contain mature seed, and could barely look at a lovely verberna, that made domes of leafless "whipcord" stems and bore heads of light blue flowers strongly vanilla scented. Beside the tower were the first plants of cruckshanksia (? *C. hymenodon*) with cool lavender bracts, and *Calandrinia sericea*, with flowers of vivid bright red above fine silky foliage — another of the world's finest alpinists! I had wondered why Clay had dismissed it so casually, until years later in the National Herbarium I discovered that all the glory had departed from dried plants, showing nothing but a vague mass of virtually colorless petals — not even a ghost of its Andean glory remained. Something suggesting *Arenaria balearica* made sheets dotted with white stars among the stones.

Then we plunged down a very steep incline on the edge of a boggy slope, and around the tower to where our guide had already stopped on a level spot where under overhanging rocks were walled off two small corrals. By now we were famished, but I could sit still barely long enough to gulp down a few rolls, boiled eggs and my first taste of charqui (jerky), sun-dried beef, which I found delicious. In front of us a high rock-strewn slope was readily accessible, and beyond the little bog a scree rose to a considerable height, dotted with patches of yellow flowers. The torrent we had crossed, now shrunk to a little brook, plunged down between green-sheeted banks from high up where a castellated rock with slides at its base sheltered small patches of snow, and beyond, a barren-looking scree led to the summit, almost veiled in clouds. I first investigated a yellow-flowered shrub on the rocky slope, which turned out to be, as I had expected and Rodolfo refused to believe, a caesalpinia, so far as I could tell the same species, *C. angulicaulis*, that had been in flower near the sea. As there appeared to be nothing else of interest on this slope, John and I started up the scree, soon finding that the yellow masses were golden-bracted *Cruckshanksia palma*, of which Rodolfo had found a single specimen at Laguna. Brilliant and beautiful as it is, for me it never quite attains the transcendental loveliness of the species with crystalline white or lavender bracts. An oxalis made small domes of grey-hairy leaves dotted with yellow flowers a quarter inch across: *O. platypila*, I believe. A single specimen appeared of a plant frequent somewhat lower down, which John called a "gymnophytum," whatever that may be; it had sprawling branches set with fuzzy blue-grey leaves, and generous heads of bloom—inch-long whitish tubes ending with lobes arranged in a complicated starry pattern. There were a few wonderfully handsome rosettes of a composite which Rodolfo called Yerba Santa (meaning merely a medicinal herb), not yet in bloom anywhere; it may well have been one of the discoid types so frequent in the Andes, but its foliage well compensates for a possibly hideous head of bloom. At last John turned back, his arms full of specimens, muttering something about the bog alone requiring several hours of work. Unsympathetically I left him to his task and continued the climb, for like Farrer I am a poor collector, neglecting the plants that do not interest me. John, on the other hand, devotedly gathered in the minute and inconspicuous, insisting that they had been ignored by all other collectors, and would turn out to be new species. I can only hope that his faith has been rewarded, and that herbaria are now rich in material bearing the names *morrisonii* and *morrisonianus*, and even *Morrisonia*—for none of which, I fear, gardeners will ever pine.

For a while the scree was utterly barren of plants, then the argylia appeared, not yet budded, and a monocot with muscari-like leaves, and no thought of bloom for yet some time. At last I reached the top, and relatively level ground, but plants were only beginning to awaken, and the only new things were a flat

woody shrub with bright green rosettes and insignificant little yellow stars, a tiny composite with prickly grey-green leaves and lovely edelweiss-like heads that occasionally were pale lilac, a trailer with rounded leaves and quarter-inch purplish flowers suggestive of those of *salpiglossis*, while entangled in the prostrate shrubs was a fine trailer that reminded me of a prostrate white heath. There were more ridges ahead, but no sign of novel plants, and at last my conscience began to bother me, so that I turned back to my companions toiling in the bog. I wish now that I had gone on to the pass and looked into the mysterious heart of the Andes. What should I have seen? Perhaps nothing but mist and cloud, but possibly (though at the time I did not realize that it was so near) the awful spectacle of *Mercedario* rearing its massive bulk some 22,000 ft. into the heavens.

So down I went along the stream near which a few sheep were busily stripping the turf of almost every plant growing there. A new flower stopped me, a minute calandrinia with a few succulent linear leaves and flowers an inch or more across, white with light pinkish-lavender tips and golden center. At first scarce and growing only in the wettest fine grass, later it sheeted dry grassless ground and looked as though flowers of *Oxalis adenophylla* had been strewn about. Another species of similar habit had blooms of the purest wild rose pink, a minute and etherealized version of its cousin *Lewisia rediviva*. Of this I found a capsule containing nearly ripe seeds, but nothing ever came of them. Shortly afterward, I fell down on a spiny dome, a foot wide and two long and six inches high, rock-hard, flecked with deep yellow pea flowers. In revenge, I hacked off a few chunks for the press, nearly ruining my pocket-knife in doing it.

When I reached my companions, I found them packing for the return trip, although there were still many uncollected plants, for the guide had been urging them to hurry. He was, it seems, afraid to leave his wife alone after dark, unprotected from "bad men." I delayed long enough for another examination of the green-rosetted *calceolaria* that sheeted the creek's edge, and found a single yellow pouch; the white-wooly one, after finding a bud purplish inside, I decided could be only *C. arachnoidea*.

And so to horse, but we went slowly, stopping for photographs of an especially brilliant plant of *Calceolaria sericea* with eight or ten flaming silken flowers. Beside it was a single plant of an orchid with fair-sized flowers of deep yellow, tipped bottle-green. Rodolfo proclaimed it a new species but of what genus I cannot recall, for it was the only orchid I saw on the entire trip, and the southern Andean ones, unknown to cultivation, are still to me names without faces. We paused again beside the verberna and viola, where another species of the latter was discovered, with rosettes of deep green leaves, out of bloom but with a bit of ripe seed. The guide rode far ahead of us, waving to hurry us on, but we lingered to admire once more the dazzling argylia and sheets of the strange whitish gymnohytium. When we came to the corkscrew switchbacks we were thankful that it was still daylight, for Rodolfo's horse skidded all the way down. We lingered at the hacienda for dinner, in vain hope that the master would return and invite us to spend the night and explore further the next day.

Reluctantly we had left the Hidden Meadow, and more reluctantly we drove away from Cuncumén. We had only sampled its marvels, and perhaps there are still more wonderful jewels hiding there. Never, elsewhere, in mountains or in gardens, have I encountered flowers of such amazing and fantastic beauty: the mat-forming argylia covered with brilliant trumpets, the lavender and golden cruckshanksias, the fiery calandrinia and its more modest but equally

beautiful sisters, the strange violas and fragrant whipcord verbena, together with plants less striking, but of great charm. I would gladly barter a not inconsiderable portion of my soul for the privilege of wandering once more through the Hidden Meadow, filling my pockets with ripe seeds of the plants of my dreams.

HEUCHERA PUBESCENS AS A ROCK GARDEN SUBJECT

EDGAR T. WHERRY, *Philadelphia, Pa.*

IN THE *National Horticultural Magazine* for 1930 the writer published a note on the genus *Heuchera*, illustrated by a photograph of the red-veined form of *H. pubescens*. This article and plate were selected for republication in the recent anniversary issue. Several readers then wrote in to inquire where this plant could be obtained. Being an American native, it was not offered by dealers in this country, and had failed to attract the attention of European horticulturists. Fortunately I had planted several clumps of it in the rock wall garden of the Morris Arboretum of the University of Pennsylvania at Chestnut Hill, Pa., and seed from this source has now been placed in the A.R.G.S. seed exchange.

This form of *Heuchera pubescens* is limited so far as known to a few wooded upland areas in southwestern Virginia and adjacent North Carolina. A mature clump will produce five or ten leaves two or three inches across, grayish green with veins varying from dark green to maroon, the pattern changing markedly from one plant to another. At least in latitude 38 to 41 degrees the leaves persist well into winter, becoming even more colorful. The flowers, appearing in spring, are without ornamental value. As a horticultural name, observers of my cultures have suggested 'Red-veined,' 'Marbled,' or even 'Bergonia-leaved' Alum-root.

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