

BULLETIN

of the

AMERICAN ROCK GARDEN SOCIETY

Vol. 14

APRIL, 1956

No. 2

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IN A NEW HAMPSHIRE GARDEN

RUTH B. MANTON, *Durham, N. H.*

RAIN GENTLY FALLS upon the thirsty garden and upon the newly-sown grass seed. The red of maple leaf and the yellow of elm swirl gayly together, waltzing along pathways and among the flowers, coming finally to rest in striking, colorful contrast upon green grass.

September, in a New Hampshire garden, is filled with the beauty of falling leaves. Even as we enjoy its pageantry, we plan our tasks for the play will soon be over and, when the curtain falls, we know that these bits of color must be collected. None must lie to pronounce death upon alpine seedlings or other small members of the garden.

Usually we have such a wretched month of drought in August that it is not until September that our hearts beat with any sort of normal tempo. In September our days are filled with planting, dividing, and rearranging the borders and gardens. Finally, all stands out in perfect neatness and, in the barn, great bales of marsh hay lie waiting for the time when they must be spread upon the more tender plantings and especially upon the roses.

It is not until October and the falling leaves that the gardener catches her breath, straightens from her demanding, though fascinating tasks, to walk with unhurried steps through the wet, colorful fall days. Overhead are rebellious skies, and on every side, the foliage fires in a daily crescendo envelop her.

How beautiful is the last rose that grows high and strong and fearless! 'Peace,' with huge blossoms of yellow and curled edge of pink looks as though it were making this last defiant effort its greatest offering.

Wooden flats, filled with alpine seed and covered with pyroethylene tops, wait for possible second-year germination. What hopes of rarity these boxes contain! What dreams of androsace, rare gentians, and of the more difficult primroses they hold! Will another year see some long desired rarity peek its modest green growth from the earthy rows? Pine needles now fall in a soft enshrouding cushion and form a warm blanket about the boxes.

The garden, which we have named Kathelen, is, or will be, composed of six distinct gardens. Since the natural and very beautiful outcropping of granite ledge over the entire garden area indicates a specialty for alpine plants, they are

the keynote in the interlacing together of all the gardens. There are no architectural boundaries nor are there hedges or planted divisions between gardens. One garden flows into another, joined or divided by ledges, woodland or shrubs. We have an especial interest in all things small and, especially, in the rarer alpines. I must confess that the maintenance on this garden is high and very specialized. Much of our work is experimental, and full and complete records have been kept for many years. From these records, we hope in time to make deductions that will be worthwhile to the New England area. Low maintenance plants such as *Ajuga reptans atropurpurea*, the deeper purple leaf form, are used where ground covers are needed.

Years ago we became very conscious of the fact that our garden was often visited by a type of gardener who did not understand alpines. These visitors, unfamiliar with the bewildering mass of alpines and seeking only a blaze of color in spring, were a real problem to us. In a busy garden season such visitors consume too much time in a garden devoted to the more modest and less flamboyant subjects.

We answered this challenge of the ordinary gardener by buying the tiny New England cottage across the road from our home. This miniature cottage sits upon a small bit of land about one hundred and fifty feet long and some thirty feet deep, and tapers off at each end, curving with the sharp curve of the road. A granite boulder wall follows the rear boundary and the neighbors' shrubs and evergreens are back of this wall for its entire distance, making it unnecessary to give up space for background plantings in the tiny area. The most important feature, however, of this small plot is the occurrence of natural granite ledges that dominate its entire length and outcrop its width. Roses climb upon the white doll-like house and upon an old weatherbeaten garage at the far end. A curtain of rock plants billows and falls over these gray ledges, along the entire length, bringing the garden almost to the wheels of passing cars. I must confess that weeding and caring for this garden is rather a precarious and often dangerous undertaking.

While in England we saw many of this same type of cottage garden. We cannot, like the English gardener, use *aubrieta* to produce the great sheets of color that are admired so much, but our own *Phlox subulata* varieties give us an even greater range of color. Our summers are too hot and dry for the use of *aubrieta* on this south-facing garden. Most of the plantings, with this one exception, are much the same in both countries: *Alyssum saxatile*, the saxifrages in variety, *Daphne cneorum*, cotoneaster and thyme, *sempervivum* and, since this is a garden of the sun, sedums in those varieties that have proved themselves less rampant spreaders.

Here in spring when snow still lies upon the other gardens, come the first crocuses followed by all the small heralds of spring. A succession of bulbs with the various rock plants mentioned and numerous other varieties increase the tempo until it reaches a tremendous height towards the middle of May. At this time, the tiny cottage and miniature grounds resemble an exciting exhibit in some flower show.

I often read that in America, there is no longer any interest in rock and alpine gardens as such, but we can scarcely believe it. This cannot be true, for each spring, from our living room windows, we watch the constant stream of cars slowly driving by the house. Finally, in the later years we have had to surrender completely this roadside garden to these seasonal visitors and their cars.

At the height of the rock garden season we flee to the private main garden on our home plot. This garden is entered through two evergreens meeting to form an arch overhead. Yew, clipped and controlled, forms the entrance walk.

We have always maintained natural dirt pathways through these entrances to the terrace where the first steps begin. We used pine needles for some years but did not find them satisfactory as a topping. For the past few years we have used sand. Both of these materials were comfortable to walk upon but now we are planting grass in these shady pathways also and think there will be more rhythmic flow to the garden without the changes from green grass to bare earth or sand. We feel too that the maintenance will be less for the grass pathway since all had to be weeded and hoed quite often to keep them neat and trim. *Ajuga reptans*, both the deep purple foliated variety and the lighter green one are used as a ground cover for pathway edging. In this way the maintenance is less since the grass will need no edging but will be kept trim by running the one-wheeled mower over its edge and the encroaching *ajuga*. A thick and neat carpet, where no weed can get a foothold, is the result.

This main garden is sunken and formed naturally by very prominent granite ledges. A short flight of steps and a winding green pathway urge the visitor to enter the garden proper. This is a garden of sun and summer heat but it is also a garden of maple and elm shade. We read the advice to beginners in books and magazines. There is usually the caution that gardens cannot be a success under the shade of maple or elm tree. Each time we smile, as we gaze at the beautiful elms that tower over the rock garden across the street; then the smile deepens as we gaze at the elms and maples that influence the plantings of all six of our gardens. We smile because we know that a garden can be a success in just such a situation.

Sun-loving plants grow upon the east and south sides of the ledges and upon the north sides, and under maple and elm spreading branches are shade-loving plants. The real reason for the building of this garden was to establish here an entirely different sort of garden from the one across the street. Phloxes are very much curbed and *Alyssum saxatile* used very little. The magenta *Phlox subulata atropurpurea* that glows in the other garden is banished entirely. *Aubrieta* likes this garden and the little *Iris pumila atrovioleacea* blossoms at its feet. Here also are especially built pockets for sun-loving and shade-loving seedling alpine. Their trial days are spent here and experimental positions are selected for the new plants to determine just what conditions suit them best.

After the garden across the street begins to attract a deluge of visitors and photographers, the garden here seems very inviting. This garden begins to reach a peak when the other has faded and even the same plants have a time lag in blossoming of about a week.

On the sunny sides grow the less rampant phloxes, spring bulbs, helianthemums, and dianthus in many colors and varieties. Daffodils, grape hyacinths and early tulips seem to fill the large area. Of late years we have grown many dianthus from seed. Some are tiny, silvery mounds and some are like tousled-headed children, *Dianthus alpinus* is here as also are *DD. neglectus*, *arenarius*, *arvensis*, *corsicus* and *alwoodii*. Tiny armerias in shades of red, lavender or white catch our attention and urge closer scrutiny. The *Silene* family is represented by *SS. acaulis*, *alpestris*, *maritima*, *wherryii*, *schafta* and the biennial *compacta*.

On one side tumble a two-toned lavender *aubrieta* and *Arabis rosea* in a delicate pink shade. No visitor fails to pause here for a breathtaking exclamation! We have found that *aubrieta* is happier when it is planted upon the shady side of a ledge or boulder where our summer sun and drought cannot harm it.

In the sunny hills of this garden the campanulas romp. *Campanula garganica* fills crevices and, in a very genteel way, flows down the ledges. *C. pusilla* and *C. carpatica* have to be curbed for they usurp the territory of other and smaller plants and smother them; otherwise they are most engaging as they

abundantly shower their blue or white blossoms over the stones into the walkway.

Hundreds of this year's seedlings grow here with great enthusiasm in special pockets. There will be many disappointments but out of the hundreds there will, as usual, emerge a surprising number of new varieties to delight us next year. *Silene acaulis* was raised last year and is now beginning to blossom. This variety came, by way of the seed exchange, from England, but this year we have raised our western *Silene acaulis* and it looks, in seedling stage, a much less compact plant.

Silene acaulis has been crammed into crevices and used like moss. The uninformed often mistake *Arenaria verna caespitosa* and *Silene acaulis* for moss. When the moss becomes starred with white or pink flowers it is very fascinating to visitors.

A sundial does not properly belong in an alpine garden but this garden does not quite boast of being alpine. Our sundial standard is low and built of field boulders and rather makes no boast of its utilitarian use. The bronze dial, itself, was a gift to a young and green gardener by a precious friend who loved flowers and gardens. Since she is gone we cherish the sundial more than ever. *Sempervivum arachnoideum* (cobweb houseleek) and other houseleeks, with all the colors of precious metals in spring, lace together the boulders. Moss and woolly thyme, in restrained amounts, bring age and charm to the entire structure.

This main garden is bordered by a twenty-five-foot strip of Savin, yew, and mountain laurel, on the west and house side. On the east it is bordered by Savins and deciduous shrubs that keep up a continuation of color. On the north huge maples with their red, red leaves dominate the entire garden in fall. On a rainy day the ledges are circled and embroidered with lichens. In the 1954 hurricane we lost our lovely smokebush and a large clump of lilacs that were over the entrance to the house area.

At the end of this garden the pathway divides. A great ledge cuts the garden from east to west and forms and controls the beginning of a second and central garden. A short flight of steps at either end and we enter the alpine garden itself.

This easterly and westerly ledge garden is some forty feet long and is planted with the alpine plants that like sun. Our western penstemons are happy here. Tiny dianthus and gentians, *Lewisia rediviva*, aubrieta and silenes revel in just the right amount of exposure to suit their needs. Large varieties of sempervivum are crammed in every available crevice and their rosettes are unusually large and colorful. From spring to winter Collies and Cockers in rotation, have stood in picturesque beauty among the changing colors of the ledge garden down through the years. It is here that the dog's drinking pool, small but efficient, was built long ago. Many cameras have turned in this direction, for it is backed by a tall pine forest in the distance and the meadow pond in the valley below.

We turn from the ledge garden and take a center pathway that winds by narrow steps to the alpine garden. Here snow lies longest between the great ledges running lengthway of the garden once more. A lean scree soil mixture and special pockets were made for the fastidious alpine plants. This garden faces north and northeast and seldom does a plant feel a thaw from December to March. *Eritrichium elongatum* from our West is growing here. The tiny kittens were raised from seed and look both healthy and happy. They came through the summer and we are hoping they will greet us again in spring. We shall, however, give them no special winter protection. This garden is for hardy plants rather than one for pampered weaklings over whose heads we must place glass or other protection in winter.

Encrusted saxifrages, looking like jewels on ledge and in crevice, and andro-

saces, multiplying fast and pleasantly, weave their woolly beauty over the boulders. *Arenaria verna caespitosa* is a willing plant to carpet any new rocks and even covers the old buried sink where a green gardener built a flowing pool and stream with no great success. *Arenaria*: this innocent little plant has to be curbed here for it loves nothing better than to insinuate itself into the midst of some innocent saxifraga and thus strangle it into oblivion. In another and shadier garden it mingles with moss and primroses and tiny maidenhair ferns and glorifies wherever it creeps.

Since the encrusted saxifrages, in named varieties, are very difficult to obtain in this part of the country and, since to bring them from England or our West Coast or Canada has proven both costly and disappointing, we raise ours from seed. We love the jeweled foliage among granite ledges and, while we would love to have true-to-name varieties, we do get a great deal of pleasure and beautiful effect from the encrusted foliage. The blossoms, with us, are merely secondary. We use them as we use sempervivums in the sunny main garden. They do not like full sun with us here in the east, or should I be more specific and say they like protection from extreme heat in New England? It seems to me unwise to make broad statements for the entire New England area. At the present moment there are thousands of little lime-encrusted pinpoint seedlings among the pockets. They usually winter well and, by the second year, are ready for permanent positions.

We plant our *Primula vulgaris* in horizontal positions. *Campanula garganica* never romps in this garden but, very decorously and shyly steals the show when it become studded with its blue stars in spring. *Campanula muralis* has lovelier and larger bells than *C. garganica* but the old variety has been hard to obtain. We think we have it now.

A new delight this spring was one of last year's seedlings, *Armeria juniperifolia*. This is listed in Bailey's *Hortus* as identical with *A. caespitosa*. It differs however from our plants of *A. caespitosa*, being more minute and altogether a more charming plant. Its blossoms are lavender but quite short of stem and of an earlier blooming period. No visitor passes it by without an expression of amazed wonder—yet it is so tiny!

Campanula barbata grows on the lower rocks and *Jasione jankae* looks interesting for another year's blossoming. *Gentiana andrewsii* has blossomed and increased in a nook, and from seed have come *Gentiana acaulis*, *septemfida*, *verna* and *gracilipes*. None except *G. septemfida* has blossomed yet.

Gray kittens of androsace, with early morning dew upon them, are as entrancing as can be. *Androsace coronopifolia* (*lactiflora*) is not woolly of foliage but has an odd rosette that is attractive. It is easy from seed but I fear it is a biennial although quite worth the extra trouble to keep it. It is not listed in the usual references so it may be posing under an assumed name.

Lewisiads are here in the seams and crannies and many were raised from seed. *L. howellii* has crinkled edge foliage that is distinct. We have a group of unnamed seedling lewisias that looks very interesting. How we would like to obtain *Lewisia tweedyi*! *Lewisia rediviva* is a queer but lovely tramp. It is rather frustrating as it forms such lovely rosettes in spring and then disappears completely, leaving great barren pockets in the alpine garden all summer. In the fall it decides to reappear and to blossom in a startling sort of way.

Along this center path are mostly the miniature plants but banked nearer the huge ledge are numerous seedling *Alyssum saxatile* 'Silver Queen.' We have great hopes for this soft yellow hued alyssum and hope some day to substitute it for the harsher *A. saxatile compactum* in the garden across the street. We would like it in a hundred positions; among the primroses, with spring bulbs, tumbling

here and there as it does in the English cottage gardens! We have planted seedlings in every aspect and with different degrees of protection. *Alyssum saxatile citrinum* has a past bad record for winter killing with us. We hope, by experimenting with seedlings, to overcome this difficulty.

Farther along the path there is shade from a huge old maple tree and here are planted primroses in quantity. Along this primrose path we arrive at the woodland terrace.

There are three pathways through the center garden. We have just followed the center one. Visitors to the garden usually choose one automatically. Alpine lovers always disregard the left and right paths and unerringly follow the path we have just described. There are those, however, who do not feel so strongly the appeal of alpines. For these uninitiated visitors let us retrace our steps and take the grass pathway to the left. This path leads along the eastern boundary of our property and under a large maple tree of beautiful design. We walk by the base of a huge natural ledge. On the right is the alpine garden we have just visited, separated by a larger and longer ledge and soft Savin evergreens.

This section of the garden has full sun for a short distance and, as the maple tree is approached, there are deeper and deeper degrees of shade for plants. Daffodils dance here along the pathway before maple leaves arrive in spring. *Hemerocallis* take the hot dry summer months of summer and keep up a succession of bloom. A cotoneaster, small as yet, will hug the earth and rise against a gray boulder.

Shady lawn grass seed was planted many years ago and a really good turf grows right to the trunk of the maple. Past the maple, the path joins the alpine path on the terrace.

I speak of terraces in a rather loose sort of way for these are not man-made terraces but natural, almost level ground, extending from and between ledges. No retaining walls are necessary.

Under the maple tree, and directly within its shade in summer and under its icy-drip in winter and spring, the large ledges are planted. Long ago, it was found that hungry roots are not the only things to be noted of this friendly maple. In spite of all advice to the contrary, a very young gardener loved the ledge under the maple and determined to plant it. Tiny spidery *Sempervivum fauconnetii* and *S. fimbriatum*, thyme, moss and tiny ferns were the answer.

In that same long ago, a very dear friend took baby offsets of the houseleeks and by the thousands studded the crevices with the tiny rosettes. There they took root and lived; *Thymus serpyllum albus* and *splendens* from the same crevices delicately creep over the ledges in red and white open tracery design. The dwarf maidenhair fern and rich mosses, collected from the woods, have woven a carpet of greens and browns. Their strange blossoming is as lovely as that of any rare alpine. Thyme does not blossom on this ledge with the showy splurge as is its habit in the sunnier gardens but, in the spring, this intermingling of greens is breathtaking and, in summer, the effect is restful and cool. Ice that forms upon the maple tree and, in turn, melts with icy drip upon the plants beneath it, has done no particular harm through the years. The crevices are well-drained and the planting is horizontal.

Under this maple tree the friend, who tucked those bits of rosettes in their crannies so many years ago, came to spend her last remaining days in a wheelchair. Here she found peace and happiness.

Now, seated in its shade on a summers morning my husband composer may often be found, pipe and paper forgotten, dreaming his music as he looks across the eastern meadow to the woodland beyond. He is conscious of the pond in the

valley as sky and trees are reflected giving a feeling of spaciousness to our garden, and an unlimited scope for musical themes. From the maple tree we frame and hold the view as our own.

Shade-loving plants spread their beauty beneath the maple: *Trillium grandiflorum*, *Fritillaria meleagris* and *F. pudica*, dodecatheon and Jack-in-the-pulpit come early in spring. The mayapple (*Podophyllum*) and large ferns spray against the ledges and primroses will blossom up this pathway in May. The lily of the valley is fast taking control until now it is thick and full of energy. Our native columbine (*Aquilegia canadensis*) of rich red and yellow coloring likes nothing better than to seed among the mosses and fern covered stones and is nowhere more lovely.

Now we will return to the foot of the alpine garden and join a third visitor who, instead of climbing the center pathway or taking the left fork, wishes to turn to the right by the old gray shingled barn. This barn, nestling in native lilacs and philadelphus (mock-orange) and small hemlocks, rises from great natural granite ledges. Some day, when we can save its aged beauty and its pegged beams no longer, we shall dismantle it. When the barn is removed these great ledges will be included in our central garden and from their heights rock plants will spread and fall forming an exciting background for the more prosaic rose garden below. Many years ago a young gardener crept on hands and knees under the sills and made her plans for the year when the barn would come down.

The moss covered shingles form a background for white lilacs, and primroses grow at its base in protective shade. Three hemlocks will, some day, take the place of the gray-shingled sides and spread their still young limbs, like a mother hen over her baby chicks, to shade the primroses in a more open garden.

On this barn pathway many shade-loving plants are planted. Here also are planted those varieties that cannot stand western exposure, northern cold and southern sun. It is protected on these three sides by barn and pine woodland. On the east the great ledge rises just high enough to protect the plants from extreme heat and eastern sun. This is a shady path but there is no dankness or killing wet in winter; instead there is light and air and deep, deep rich green. Aubretias love to clamber over the path-bordered boulders and to tumble onto the pathway. Shade-loving primulas mingle with sun-loving daffodils and grape hyacinths in early spring. *Clematis serratifolia*, raised from seed bought from an English firm, grows at the top of the great ledge and we hope it will stream its yellow and purple blossoms down the sunny side of the ledge at a future date. The auriculas, in named varieties, were brought from the state of Washington and are planted in horizontal crevices. They were most miserable before we learned to plant them in such situations.

Here, also, are tucked many seedling varieties of cytiscus and genista. These shrubs may not be hardy, as the brooms are never very reliable in this region; but this is an experiment and we hope to winter them with some protection. Perhaps a few will reward us with the hardy desire to live with us in Durham. We saw many types of broom doing nicely in the Arnold Arboretum when we visited there last spring. Boston is not far in miles from New Hampshire but conditions are entirely different. You might as well think of Cornwall and London in the same breath. We saw much broom in Scotland and England and there are many varieties farther south in Virginia but a New Hampshire winter and hot summer make very different conditions. We hope, however, to keep a few of our baby brooms for they are very precious.

The great ledge is crossed and intercrossed its entire length with narrow but deep crevices. *Silene acaulis* seedlings, *Arenaria verna caespitosa* plants, and moss are crammed with dainty houseleeks into these horizontal seams. These are

the "charm" plants of the ledges and small pieces of *Thymus serpyllum albus* creep over and age the rocks that are already circled and threaded with lichens. A wild New England rose, with its feet encased in great rosetted sempervivums, has daintily blossomed for twenty years.

Meconopsis cambrica seedlings line the pathway farther along in deeper shade and under pine spillings. The cardinal flower (*Lobelia cardinalis*), native of our New Hampshire bogs, is here in seedling stage. Our cardinal flower likes a moist condition but I have read that it will adapt itself to a less moist position if it is raised from seed and moved into permanent quarters when quite small. We hope this is the solution, it is indeed a desirable beauty.

As we approach the terrace primroses are on every side. *Primula denticulata* and its variety *cashmeriana*, and *P. cortusoides* are interplanted with ferns under the pines. The polyanthus primroses look fresh as they peek out of a covering of newly-fallen pine needles. The contrast of crinkly green against the soft brown and golden spillings brings an expression of delight from us.

Here, at the terrace, formed by natural ledges, the three pathways that we have described meet. Before us, to the right and left, two long flights of narrow gray fieldstone steps wind down into the two gardens below. A pine needle pathway leads off into a woodland path.

We look down the steps. Pines spread their great branches above primroses, azaleas and rhododendrons. At the foot of one flight of steps *Iris cristata*, the white and the blue, are growing. These iris like a bit of shade and more acid soil here with us. Ferns, hepaticas, dodecatheons and dwarf *Mertensia alpina* make the slope interesting in spring.

Now we look back down the three pathways that we have traveled. We look across the center and main gardens and even to the yews at the entrance gate. How green are the pathways! How red the maple and how yellow the elm! How blue the pond and how mysterious the purple shadow of yew and Savin; but, most of all, how full this garden is, of dreams and hopes as yet unfulfilled!

Let us rest here upon the terrace for we have walked far and the outer gardens must wait for another day. Perhaps you may wish to return some future day and go with me down the two flights of steps are we will wander along the woodland path past my husband-composer's studio.

From this studio has come the music—a symphony or perhaps just a simple song—growing in maturity with the years even as the garden has grown beautiful in its fulfilled promise.

The gardener could not have dreamed her dreams so happily had not the music flowed so freely.

As we gaze about us, the sleep of autumn is almost upon this silent garden and we needs must exclaim, "How beautifully do pine trees put a garden to bed!"

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Any member wishing to dispose of any of these numbers will please communicate with the Secretary.

CACTI ON LONG ISLAND

ALEX J. SUMMERS, *Hempstead, N. Y.*

A FASCINATION FOR CACTI exists among rock gardeners as well as among those who garden without benefit of stones. It is indeed strange when I think back and realize that no plant other than cactus has been pilfered from this garden. The latest instance was the loss of a two foot plant of *Astrophytum ornatum* from the front steps, certainly much too heavy a plant for any child to handle. Perhaps this is why cactus is the only plant family protected by wire guards at the botanic gardens. Mr. E. Morgan tells me that it is impossible to keep *Opuntia compressa* at the pathside at the Tackapausha Preserve.

A recent tour of eight Massachusetts rock gardens showed plantings of cacti in five. These cacti were chiefly prickly pears, platyopuntias, both eastern and western species, in some gardens growing fat and lush, and in others dried out and half dead. From these observations as well as from my own experience I am convinced that opuntias do not require or enjoy too lean or dry a soil mixture. My present planting is made on a former azalea and rhododendron bed without any soil alteration made to accommodate the cacti. The only treatment has been a top dressing of white beach sand to help increase the light intensity; light colored stones were also used for the same purpose.

Opuntia compressa, our eastern native, has been with me over fifteen years, being part of my original rock garden planting. When the rock garden was enlarged four years ago the need for a separate cactus area was apparent, for the addition of new species. As only a few were available from rock garden nurseries, I wrote to one of the largest cactus dealers for a list of hardy varieties. A peculiar situation exists among the larger dealers where it is much easier to obtain South American and Mexican species than our western natives. Because of this, I ended up with seven species found in Mexico and the bordering counties of Texas. Hardly anyone considers *Mamillaria hederi*, *Thelocactus bicolor*, *Echinocereus fitchii*, *E. dasycanthus*, *Opuntia lindheimeri* and *O. linguiformis* as hardy, yet they have done well here on Rhodes Avenue.

All the cacti I observed elsewhere this summer were under a foot tall, so I shall describe three of my taller plants. *Opuntia lindheimeri* is an upright, luxuriant growing, large oval padded species at present eighteen inches high. The larger pads measure seven inches wide by eight long, bluish green in color, with a grape-like bloom that comes off at a mere touch. The well-spaced spines are an inch in length, heavily mottled brown and yellow, and sparsely clustered on the upper half of the pad. This cactus has never shown a sign of wrinkling with the advent of colder weather, but has remained erect and plump all winter.

The remarks of Britton and Rose may be of interest: '*Opuntia lindheimeri* is an extremely variable species, composed of many races, differing in armament, color of flowers, size and shape of joints and of fruit. Certain forms have been described which in cultivation we have been able to recognize as possibly distinct; but in the field they seem to intergrade with other forms, indicating that they are at most only races of a very variable species. In the delta of the Rio Grande this is especially true, and from this region a number of species has been described. In fact, all the plants described as species which are cited above in the synonymy (twenty-one synonyms are given) grow within a relatively small distributional area. Dr. Rose has examined all of this region and is of the opinion that only one species of this series exists here, and this we believe is to be referred to *Opuntia lindheimeri*. It is very common about Brownsville and Corpus Christi,



Opuntia imbricata,
the cholla cactus

Alex J. Summers

where it forms thickets covering thousands of acres of land. It is very variable in habit, being either low and wide spreading, or becoming tall and tree-like sometimes three meters high, with a definite cylindrical trunk. Plants from these two extremes, if studied apart in the field, might be considered as different species, but in the field one sees innumerable intergrading forms. The low, prostrate forms gradually pass into others with more or less erect or ascending branches, while the large tree-like forms often bear large lateral branches which lie prostrate on the ground, indicating that they have developed from the prostrate ones.'

Opuntia linguiformis was found growing in very limited quantity in about three places in the vicinity of San Antonio. It does not occur elsewhere, so far as is known. It is called cow-tongue cactus because the stems are elongated or taper off like a cow's tongue. The following observations made by Mr. H. B. Parks, who lives within three miles of the type locality, are of interest, 'In making a distribution study of *Opuntia lindheimeri* it was found that certain variations occur, the most striking of which is one with triangular or parallel-sided pads. This form seems to be of much more rapid growth than the type, and for ease of record was designated as *Opuntia lindheimeri* var. *brava*. The first peculiarity noticed was that it seldom bloomed. In case of bloom, the flower cannot be distinguished from that of *O. lindheimeri* blooming in the immediate vicinity. If fruits are set, they do not develop seeds. This variety is therefore dependent on pad distribution for its perpetuation. The long padded form is more brittle and susceptible to disease than the round padded form. The habitat of this form seems to be the "hog wallows" of the mesquite thickets. These wallows are low places where storm water gathers and where through a long lapse of time a very peculiar soil has been developed through the decay of washed-in vegetation. The larger of these basins have given rise to small water courses made necessary to carry off the excess of water. From such locations many pads, separated from the parents by accident of weather, animals, or by the simple vegetable division which occurs where an unfertilized fruit gives

rise to pads, have been carried and planted at some distance by water. Two localities are known where roads were built through growths of these cacti, and the long padded form has been scattered from two to three miles on each side of the original location by grading machinery. The common characteristic of this variety is the long tongue-shaped pad which bears few or no flowers. A close study of the morphology of these plants gives the following. In the common or recognized species, the pads are round or orbicular in shape. They have no definite growing point. When the pad starts to grow, its size and shape seem to be predetermined as the growth expansion takes place all over the pad and at the same time the outside edge is always smooth and complete. In the variety the new pad has a growing point from which the pad continues to elongate and to broaden, whenever, and as long as, growing conditions continue. If the growing period is short the pad will be triangular. If the growing continues the pad elongates and the sides become parallel. Pads three to four feet long and only three to four inches wide are quite common. Such pads are produced during wet seasons when the growing period is from May to September. On many of these pads the scalloped edge gives the record of alternate wet and dry conditions of the weather. The coming of cold weather puts an end to the growing of the pad, but does not do away with the growing point. The form named *O. lindheimeri* var. *brava* was named *O. linguiformis* by Doctor Griffiths, but as there is little doubt that it is a lethal mutation and cannot perpetuate itself, it is doubtful if it should receive specific standing.'

My clump of *Opuntia linguiformis* evokes more interest and comment among garden visitors than I receive for rarer and more expensive plants. Fifteen new pads appeared this year, varying from four inches wide and twelve long to six inches wide and three feet long as I write this in August. These pads remain erect until winter when they lose some of their turgidity and bend down touching the ground with their tips as though tired from their growing efforts. Again as in *O. lindheimeri* no wrinkling is evident.

Opuntia linguiformis,
cow-tongue cactus

Alex J. Summers



Opuntia imbricata is commonly listed as hardy, so should be familiar to both northern and southern gardeners interested in plants for dry situations. The largest plant here was sent by a friend from New Mexico as a two year old seedling three years ago. It now has two stalks three and one half feet high, with thirteen new stalks starting from the base. Schulz and Runyon list seventeen synonyms, the one most commonly used being *O. arborescens*, the tree cholla.

It was only last winter that I discovered a source of supply for the more northerly of the western species. Of course the planting had to be enlarged to accommodate these, and I ended up by reshuffling all the older plants also. Some of the new plants that are expected to provide additional tall luxuriant effects are the chollas: *Opuntia spinosior*, *O. kleiniæ*, *O. leptocaulis*. Other upright large-padded species are *O. macrocentra*, *O. chlorotica*, *O. phaeacantha*, and *O. englemannii*. All the little barrels, pin cushions, and fish hooks grow much more slowly and are of use to provide varied plant forms of a compact nature for foreground effects. Altogether I am experimenting with sixty-five species, more or less, depending on whether one decides a given plant is a species. Confusion among the botanists does not concern the poor plants, fortunately, and they grow on blissfully unaware of the tempest of names hurled back and forth over them.

Postscript (late October). Some of my new cactus plants failed to establish new roots, while others had none on arrival and decided not to take hold. As I bought a number of each variety, I can lay this failure to individuals rather than to species. Losses did occur among newly established plants immediately after the downpour of rain in late August, fifteen inches in less than a week. Rotting became apparent in early September, long before any cold weather, so cannot be due to frost. My conclusions to date are that the so-called tender species are not afraid of cold weather as much as they are of the wet. As a result I plan to elevate the entire planting so that no water remains on the surface after rain. (All opuntias seem to thrive in spite of the dampness.)

The resistance to dampness varies according to the origin of the individual plant: for example, two *Echinocereus viridiflorus* from New Mexico both rotted, while three from South Dakota are perfectly sound. These were planted a few inches apart in one group, so that the difference in behavior can only be laid to difference in origin. Others lost include two of five *Neobesseyia missouriensis*, and one of four *Pediocactus simpsoni*.

THE THREE JACKS

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

OF ALL OUR EASTERN WILD FLOWERS, if a poll were taken, I believe that the common jack-in-the-pulpit would be found to be the favorite among gardeners. At least, it would be the wild flower most grown, if we exclude garden hybrids and forms, often rated wrongfully as "wild flowers." But it is not well known to gardeners that botanists have divided the jack into three species.

When this is done, a fundamental rule of nomenclature is that the name in use is assigned to the species first described under it. As often happens in such cases, it is not the jack that most of us know that retains the name *Arisaema triphyllum*. The jack that we all know so well has become *A. atrorubens* (accent on the second syllable).

It is unnecessary to describe *Arisaema atrorubens* as it is well-known to everyone. Its hood arches over the "preacher" like a sounding board above a pulpit. If we dig it up, we find the small side tubers bunched around the mother tuber, never at a distance, as is found in the other two. The leaves are usually pale underneath and the side leaflets are irregular. The upper side of these leaflets comes down nearly straight and the lower is rounded. While it likes fairly moist growing conditions, it grows in woods, much drier than the other two like. It blooms from mid-April to June.

The name *A. triphyllum* is now applied to the plant known to wild flower lovers as the small jack-in-the-pulpit. It averages smaller in size than the common jack and is very limited in its range. It is to be found in wetter places as a rule.

The leaves are different too: always green beneath and with the two sides of the lateral leaflets alike. The hood is not arched but almost upright. If we dig this jack up, instead of a cluster of corms as in the common jack, we find long runners or stolons, at the ends of which new tubers and plants form. Although they overlap in their times of blooming, the small jack is about a month later than common jack in its flowering, beginning in mid-May and lasting till early July.

The third of the jacks, although of wider range and more common than the small jack, seems to be the least known of the set to wild flower growers. As far as I know, it has no common name, aside from the unattractive and misleading one of "bog-onion." Its botanical name is *Arisaema stewartsonii*.

It likes a much wetter home than the common jack. I have always found it in very wet places and doubt if it would long survive the dry shade provided for the wild flowers in most gardens. But with plenty of moisture, it grows equally well in shade or full sun. It lives on happily in my garden in a small artificial bog which is always a pool in earliest spring and has, even in the dog days, moisture at its roots. Here, it gets full sun in the middle of the day but some shade from distant trees at other times.

In its native haunts, it loves cranberry bogs, with their spongy sphagnum carpets. But it does not bloom until green berries have replaced the curled-back flowers and the bog orchids with their fragrance have vanished into the fastnesses of their sedgy homes as if they were no more. It is the latest of the jacks to bloom, though, in the small area where all occur, they may all be found blooming at the same time. Here, I find it in mid-June, definitely later than the common jack.

The striking field mark is the deep corrugations along the tube. The ridges stand out white against the darker base. No one can miss this in the growing flower if he has eyes that see although in the pressed specimen, it hardly shows. It may spread by runners as the small jack does but its hood is often more arched though usually not as much as that of the common jack.

The small jack, *Arisaema triphyllum*, as mentioned above, has the narrowest range of the three, as the others are found north of it and it is not found in the west. It is a plant of the Atlantic seaboard from Cape Cod in Massachusetts to Florida. The common jack, *A. atrorubens*, which is the one everyone knows, grows from New Brunswick to S. E. Manitoba and from Maine to North Carolina. Along its southern range, it extends westward to eastern Kansas. *A. stewartsonii* goes more northerly into Nova Scotia and Prince Edward's Island and westerly, to Minnesota. Along the coast, it may be found to northern New Jersey and then along the mountains to North Carolina.

Wild flower gardeners are inclined to put too much weight on color in their naming of flowers but, botanically, color is negligible. In the common jack, the hood may be green or purple or striped. In the small jack, it may be green or purple, without stripes. *A. stewartsonii* has a green or a purple striped hood.

AMONG MY RHODODENDRONS

IZETTA M. RENTON, *North Bend, Wash.*

HI FOLKS!

Will I show you the dwarf rhododendrons? I certainly will be delighted to do so, for I'd rather look at, and talk about, rhododendrons than anything else.

Let us start here and cross the top of this little hill, and come down by the far end of the pool. The plants next to the path are *R. keleticum*: fascinating, the way they follow the contours of the rocks and ground, isn't it? Such tiny leaves and such large saucers of rosy flowers completely covering the plants make this a good species for either a large or a small garden. The drift of plants in back of these is *R. impeditum*. They look like small trees, are over ten years old and still only eight to ten inches high. They certainly do a wonderful job of covering each twig with blue-purple flowers. The little ground cover under them is a pink androsace. The rhododendrons still higher up are *R. intricatum*, a nice twiggy little bush covered with mauve flowers. The taller ones are *R. hippophaeoides*, with quite large flowers of a good shade of lavender blue, and lovely grey-green foliage.

On the other side of the path are some very special favorites of mine. This one is 'Carmen,' a cross of *R. didymun* and *R. repens*, with huge crimson bells, a good one in either large or small plantings, for it makes a perfect little specimen, and is just as nice planted in drifts. The ground cover here is *Gaultheria cuneata*. The plants just back of these are 'Bric a Brac,' a wonderful little one, for the foliage is very glossy, yet the edges of the leaves look as though they were rimmed with silky hairs. This cross of *R. leucaspis* with *R. moupinense* has large flat white flowers in April. The ground cover here is a lovely blue violet from the Alps.

Down along the side of the pool, the planting consists of several 'Arthur Osborn' (*R. didymun* x *griersonianum*), with beautiful red blossoms, in June. It has deep green, rather rough foliage, and makes a plant eighteen inches high and two feet across. I like it very much and use many plants of it. The plants in front are Azalea 'Gumpo,' which blooms at the same time as 'Arthur Osborn.' The white flowers are large, and the plants stay dwarf and neat.

At the back of the pool are drifts of evergreen Kurume azaleas in a dwarf form, blooming so heavily, in shades of pink and lavender, that one cannot see the foliage. They look like one huge bouquet when in flower, and when out of bloom are very neat looking with small leaves of a good shade of green. Back of these are a deep pink form of *R. racemosum*, quite old and only eighteen inches high. This is another good plant for either large or small spaces.

Let's cross this little bridge and look at the plants on the far end of the pool. Here are more of 'Arthur Osborn,' while next to the pool are *R. didymun*, a very slow grower — my twenty year old plants are not over a foot high and eighteen inches across. The bloom is deep red, almost black, above dark green glossy foliage. Farther back are 'Blue Tit' and *R. virgatum*. The ground cover here is a blue anemone from the Alps.

Shall we take this little path running down along the little creek? Oh, yes, the creek and pools and falls are all man-made, or I should say woman-made, for I made them all myself. There are ten pools and six waterfalls, and a bog garden at the foot of the hill.

The rhododendrons on the right here are 'Moonstone' (*R. williamsianum* x *campylocarpum*), with beautiful heart-shaped leaves and short broad bells of

soft yellow. All of the williamsianum hybrids have these beautifully shaped leaves. The plants farther back are more 'Blue Tit' (*R. impeditum* x *augustinii*) a lovely plant, well formed, with flowers of good size and color. Here I have used several forms of hardy cyclamen for ground cover. They have handsome foliage, and all of them are covered at some time of year with cunning little flowers. The plants on each side of the path here are *Daphne retusa* and *D. collina*. They go well with the small rhododendrons and are very fragrant. On the left of us, next to the little creek, are deep purple *R. fimbriatum*, years old, but not over two feet high; they certainly cover themselves with flowers every year.

The little plant with the narrow leaves, along the edge of the water, is Azalea 'Flame Creeper.' It never grows over eight inches high, but I have some plants over eighteen years old that are two feet across. It grows almost like a vine and roots as it touches the ground. Later on this month it will be a mass of flame colored trumpets, large for the size of the plant. Higher up are plants of *Viburnum davidi*, which goes well with the rhododendrons. It has deep green corrugated foliage, and flat heads of white flowers followed by bright blue berries.

The 'Bow Bell' Rhododendrons next to the mugho pine are very old too, and each year have hundreds of lovely fat pink bells, over fascinating little heart-shaped green leaves. The epimedium in front is a white form called 'Nevim,' whose foliage goes well with that of 'Bow Bells.' Farther back toward the white cherry is a very dwarf form of *R. keiskei*, some of my oldest specimens, yet not over eighteen inches tall. The flowers are a lovely yellow color and the habit of growth is good.

Let's cross this little bridge. I love the sound of the little creek and falls; it is such a cool soothing sound on hot days. The birds love to bathe in the shallow water where it runs over the large stones.

On our right are more 'Blue Tit' and *R. intricatum*, while the dwarf plants in the foreground are a form of *R. macranthum* (an azalea) with deep pink double flowers. The little gaultherias are 'Wisley Pearl.' I am very fond of the small gaultherias, and use several species for ground cover among the rhododendrons. On the left are some new hybrid rhododendrons: 'Adrastia' (*R. williamsianum* x *neriiflorum*), with deep pink bells and heart-shaped leaves, and 'Treasure,' (*R. repens* x *williamsianum*) with similar heart-shaped leaves, and open bells which are also deep pink. The little species growing with them is *R. radinum*, compact and bushy, with white flowers edged pink. It is supposed to be tall, and will have to be moved some day, but so far is only a foot high.

Over to our right, on that slope on the first terrace, is an old plant of *R. chrysanthum*, with odd little rounded leaves, not much longer than wide, rather curled under on the edge. A friend has one that blooms with fat yellow trumpets. Mine should bloom soon, for it is years old, and I'd say very healthy looking. Farther along is *R. hanceanum nanum*, with pale yellow flowers and leaves sticking straight up. It stays compact, and has never grown over six inches high.

Farther up are plants of *R. glaucum*, of which I could never have too many. I have two forms, or color variations, a purple and a pink. It is a neat little fellow, never too tall, and is covered with its enchanting little bells which have a grape-like bloom on them.

As we climb this little hill on our right are plants having bluish green hairy foliage on compact little shrubs. These will bloom in June with wide flat flowers of a lovely shade of yellow—*R. caesium*, one of my favorites, which blooms while very small, and the yellow flowers seem perfect against the bluish foliage. The ones next to it are *R. calostrotum*, with grey-green leaves that look like felt,

and flat saucers of bright rosy magenta. I do not mind the magenta shade against the greyish foliage.

These little plants are the deciduous *R. camtschaticum*, of which I raised a lot from seed. They are hard to transplant but once established certainly repay one for all the trouble, with their wide saucers of reddish purple, like silk in texture. The little plant growing with them is *menziesia*, which I raised from seed; they are related to the azaleas, and these have pink flowers, but I have some yellow forms coming on from seed.

Over on the other side of the path and across the top of the hill are 'Blue Diamond,' whose blue color is breathtakingly lovely. In the foreground are plants of *R. ciliatum*. The narrow green leaves are rimmed with stiff hairs. The plant grows broader than high and has deep pink flowers in June.

Watch these stone steps, for they can be slippery at this time of year. The little flat growing plants along the steps are 'Pink Gumpo' azaleas, which have huge flowers of a luscious shade of pink. The little rhododendrons here are a hybrid, 'Racil,' with quite large flowers of apple blossom pink in April. The little daphnes growing with it are *D. arbuscula*, with long narrow evergreen leaves. I love the fragrance of its purple flowers, and think it goes well with the rhododendrons.

Along these ledges are the five variants of *R. repens* which I have had for only four years. All grow very slowly and it is too soon to tell what they will eventually do. Here at the bottom of the hill, on this ledge, is my twenty year old plant of the *forrestii* form of *R. repens* (*R. forrestii?* Ed.) with crimson flowers, a prostrate shrub with crimson flowers, which will never grow any taller than it is now, but will grow wider; it is now thirty inches across. On the ledge above it is the form of *R. repens* from Grieg's nursery at Royston, Canada. It will bloom from seed in three or four years, and as you see makes a little upright bush eight inches high. It is a hybrid, and no one seems to be sure what its other parent is.

The little creeper with narrow foliage and huge purple saucer-shaped flowers is *R. radicans*. The other creeper with rounder, glossy green foliage, hairy edged, is *R. prostratum*. It too blooms with wide saucers of purple in June.

Higher up, on the next ledge, is *R. sargentianum*, with shrubby habit of growth, branching from the ground, and narrow foliage. I think its little narrow yellow trumpets are beautiful. Still higher up is *R. myrtilloides*, an admirable little plant not over six inches high, with reddish branches and foliage glossy green above and greyish below. The flowers are flat, bright magenta purple. When one reads about flowers that are described as magenta, one often decides that the plant will not be pleasing, but on seeing it, the foliage seems to blend so well with the color that it does not seem obnoxious.

After seeing some of the hybrids a while ago, one will probably recognize these plants along the path, with the adorable heart-shaped foliage and fat tubby bells of warm pink, as *R. williamsianum*. My form of it grows as a creeper. I have heard that some forms grow upright, and have seen pictures of such plants, but I prefer the prostrate one. The little violet used here was given me years ago, and I do not know what it is, but it blooms all summer, and always has a purple tint to the foliage.

These small plants are *R. nitens*, all of ten years old, but not more than four inches tall and a foot across. They have broad saucers of pinkish purple and glossy green foliage. The compact little fellows with mauve blooms in April are *R. drumonianum*, which make nice foreground plants. The plants near these, with long narrow foliage, are *R. scintillans*, growing about one and a half

feet high, with flowers of a good lavender blue. Here is *R. moupinense*, in a low spreading form with deep pink flowers, and shiny, healthy-looking foliage. It blooms early and needs a favored position, but is worth the trouble.

Here are plants of *R. ferrugineum*, the alpine rose of Switzerland. I raised these from seed, but the first ones I put here were broken by a boy who was trying to go to the pool. I shoved him out, but too late to save the plants, so brought more up from the greenhouse. I am anxious to see them bloom, but they may grow too tall for this spot and have to be moved. Along here I use dozens of cyclamen in several varieties. They reseed themselves, and each year grow larger and furnish more of their lovely flowers and foliage.

On this side of the trail is a terraced garden with small cedar logs used for risers. This is where I grow my small treasures, such as the tiny hybrid rhododendron four inches high and several years old, several hardy cyclamen, and haberleas loaded with lavender and purple tubular flowers. There are several little gaultherias, *Shortia galacifolia* and *S. uniflora grandiflora*, schizocodon, leucothoes, *Epigaea asiatica* and *E. repens*. At the top of this slope, around the base of this large fir tree, is a bed formed from the root of a stump, turned up and filled with compost, leafmold, peat and pine needles, and here *Synthyris rotundifolia* and *S. reniformis* are happy and seed themselves. Around the tree and higher up the hill are my *Erythronium* 'Pink Beauty,' with anemone in blue shades. Next to them in large drifts are some of our native *Cypripedium montanum*, a lovely sight for six weeks, and quite an attraction for the camera fans. The brown and white flowers are quite large and grow several to a stem. They have been here fifteen years and each year get larger.

Oh, is it that late already? We have seen hardly half the plants I should like to show you. I have enjoyed showing you around so much, and hope that you will come again. I have many other little species coming on from seed, and several dwarf crosses of my own, as well as some from other hybridizers, which will be blooming next spring. I do enjoy talking with others interested in gardening, so hurry back, folks.

BOOK REVIEW

Blumenzwiebeln für Garten und Heim. By Wilhelm Schacht. 171 pages. Stuttgart, Gerokstr. 19, Germany: Verlag Eugen Ulmer. DM 16.

The excellent book on rock gardens by Mr. Schacht, a horticulturalist at the Munich Botanical Garden, has already received notice in our BULLETIN, Vol. 12, No. 2. Now he has published another valuable work, on flowering bulbs for the garden and the house. While understandably a number of the sorts treated are too large for the rock garden, he includes an unusual number of tiny treasures, including many that he has introduced in the course of trips to Asia Minor and other east Mediterranean regions. The book is profusely illustrated with 16 color plates and over 50 half-tones, including beautiful habitat views of flower-bedecked mountain slopes. The text includes concise descriptions of the species and horticultural varieties, and cultural directions. Those of our members who can read German—even if only a little—will find this a most desirable addition to their libraries.

E.T.W.

CORRECTIONS

Credit for the photographs accompanying "A Front Yard Rock Garden", by Maj. Gen. D. M. Murray-Lyon was given to the author, who has since informed us that the ones at time of planting were taken by Mr. W. K. Holmes, those five years later by Dr. Henry Tod.

In the same number, page 114, for "Peck's Manual" read "Peck's Manual".

VERNAL IRIS

STEPHEN F. HAMBLIN, *Lexington, Mass.*

Nowadays there is much attention being given to the dwarf bearded iris as suited to rock gardens, particularly the very dwarf *I. pumila* and new seedlings and hybrids. Other very dwarf species are equally worthy of investigation and improvement, as our crested iris (*I. cristata*), but its rhizomes walk about too much for use in small gardens. There are certain stemless bulbous beardless species, as *I. persica* of the subgenus Juno, in bloom like a one-flowered gladiolus, and the *reticulata* group, like a crocus with three petals. These are true bulbs, and stay in place well, but in our northern states may regret their native Mediterranean home and soon disappear.

There are very dwarf species in the beardless groups, with fibrous roots, and of these I seem to prefer our native vernal iris, (*I. verna*), wild from Maryland to Georgia. It is perfectly hardy, with a compact fibrous root system, like a baby Siberian. Any soil in a rock garden, perhaps with some shade in summer, seems to suit it, from moist to somewhat dry. Apparently it is a wildflower of open woods. The leaves are narrow, dark green, partly evergreen. In May a short stalk rises some 4-6 inches, with a solitary flower, or sometimes two, the standards nearly as large as the falls, very erect, the falls drooping, in effect an over-size purple crocus with the three outer segments turned back. The flower is a uniform deep violet, but the throat of the falls has a large orange patch which glows against the violet coloring. None of the usual dwarf bearded varieties has so startling a color contrast as this. The smooth orange patch is very distinct and distinctive. Before we go into raptures over dwarf species of Iris from Europe and Asia let us give a place to this gem from our own Atlantic region.

This iris was discovered by the first settlers, and plants (at times seeds) are offered by dealers. The seed germinates very readily, and the seedlings should have the care given to seedlings of the smaller bearded sorts. By tramping the hills in its range, color variations can be found, and a beginning of the possibilities in this direction is here listed. Plant every seed that you can get, and variations will appear.

Botanists have made one variety (var. *smalliana*), not yet in the trade, which ranges from Pennsylvania to Florida, and which is more robust in growth.

From the wild four variations have been listed since 1930, but they have not become widely planted: 'Vernamont', soft blue, from West Virginia; 'Vernapied', lilac blue, from Virginia; 'Superba', deep blue, from North Carolina; and 'Coastal', lilac blue, 3 inches, from our coastal plain.

The following varieties have been found wild in Virginia or Georgia by Mrs. J. Norman Henry, and have been offered by a few dealers, but are rarely seen as yet: 'Vernal Snow', pure white, superlatively beautiful; 'Vernal Fairy', white tinted lavender standards, falls pure white; 'Vernal Dawn', pinkish lavender; 'Vernal Simplicity', pure lavender, orange throat lacking; 'Vernal Sky', pale sky blue; 'Vernal Evening', deep lavender, and 'Vernal Night', deepest violet purple.

Thus a good start has been made at a group of dwarf beardless species for our rock gardens.

* * *

However, I have ordered it, regardless of prudence, and we shall see.—

FARRER.



Dr. H. S. Wacher

MORISIA HYPOGAEA

CARL STARKER, *Jennings Lodge, Oregon*

Morisia hypogaea is a good example of a rock plant that is not an alpine and that does not in nature inhabit rocks! In its native haunts in northern Corsica and Sardinia it is found almost at sea level in quite gritty, limy soil. Its dwarf tufted habit, an attractive flat growing rosette of glossy, toothed leaves, and its myriads of golden cruciform flowers, borne singly but massed and almost stemless at the center of the tuft, surely put it in a class with the most refined alpine.

It starts blooming in very early spring—often late February or early March in my garden—and stays in bloom for a long period. Like most crucifers it enjoys lime but is quite happy with me in acid soil. It insists on sun for long flowering, often October through May. Planted against a south-facing warm rock in quite gritty soil it is a gay and colorful sight for weeks. It propagates readily in mid-summer from root cuttings that can soon be potted off to make attractive young plants, or cuttings can be made from the main crown.

Do not grow it in too rich soil, or the plant will grow coarse and leafy. It wants grit, lime, and sun. It is a real treasure, and although it does come from Corsica, is hardier than one would suppose if grown in the right situation.

(In the East, this has about the same degree of hardiness as *Erodium chamaedryoides roseum*, occasionally wintering in the open, but not satisfactory except in the alpine house, where it will survive considerable freezing.—Ed.)

* * *

In this variable and inconstant climate of ours a succession of wet years may encourage one thing, only, perhaps, for a droughty summer to decimate it, and blazon the potentialities of others.—CLAY.

TRILLIUMS BRING THE SPRING

MARY G. HENRY, *Gladwyne, Pa.*

(Reprinted from *House and Garden*. Copyright, 1941, by Condé-Nast Publications, Inc.)

TRILLIUMS ARE LOWLY PLANTS, to be sure, and not especially striking or conspicuous in appearance, but they belong to the liliaceous tribe, and have a lily's simplicity of form, wonderful poise and appealing beauty. To my mind they are among the most attractive of all herbaceous plants.

No difficulty presents itself in their cultivation, providing an effort is made to give them a location that approximates that of their native haunts. They are long-lived plants, and increase naturally both by additional growths and by self-sowing.

It is worth taking infinite trouble with them to make them happy in their new home. A shady place where the ground can be deeply dug and liberally mixed with leafmold suits most of them. In ground that is heavy a little coarse sand may be added. If there is some natural moisture in the soil, especially during the Spring season, so much the better. Certain species, however, especially those from the South, seem to appreciate a dry situation during Summer, their resting season.

As trilliums start growth very early in Autumn, transplanting before September 15th is desirable.

Many dealers list the commoner but no less beautiful trilliums and they are not expensive. But until they are propagated more plentifully by seed and division, it is unwise to purchase them in quantity. Alas, from many areas they have almost disappeared, owing to the heavy demands made on the collectors or their agents who often strip the forest in order to satisfy their customers' demands. The true lover of these precious plants will endeavor to increase his stock by seeds and vegetative propagation.

Trilliums look well planted in little groups of perhaps three to twelve of one kind. All trilliums last long in bloom. Nature sometimes carpets a forest with them, but we have no right to do this with plants taken from the wilds. A few years hence the fast diminishing wild supply of trilliums will be exhausted. It is indeed shocking to think of, but our country is being gradually stripped of its dearest treasures and the floors of many of our great silent forests have been bared of the wild plants with which they were once thickly carpeted. Mr. Carl Purdy, skilled plantsman of the world-wide fame, published a splendid little note in *Horticulture*, on the propagation of trilliums:

"Where a number of bulbs are available to be propagated, remove the soil to expose the crown but without disturbing the roots and cut off the top of bulb, preferably just at the ring showing the line of new growth. On a large bulb from a few to as many as 30 small bulbs will form before the next Spring and in many cases it may be possible to remove the new bulbs in late Fall and have a new crop by June if a shallow new cut is made just below the previous one. In any case remove the little bulbs not later than July of the next year and plant them in rich woodland soil.

"If the bulbs are out of the ground, decapitate and plant both parts. Where but a single bulb is available and it is desired to continue it in flower, a narrow wedge may be removed around the line of the new growth ring without injuring the growing crown and multiplication along this cut may be nearly as rapid as in the case of complete removal of the crown.

"Trilliums in commerce are collected or grown from seed and this method is not used commercially, but very often bulbs are cut when digging. I always replant injured bulbs and many times, when redigging several years later, I have found close clusters of from 5 to 30 flowering bulbs over the remains of an old injured bulb"

Every one of the following species and varieties are growing on my wooded hillside.

Trillium catesbaei is distinctive and exquisitely lovely with its rose pink lily-like blooms that droop gracefully from their slender stalks. In order to see and appreciate the full beauty of the flower this trillium should be planted on a hillside among rocks, if possible, so that it may be admired from a lower level. I saw *Trillium catesbaei* thus for the first time in the North Carolina mountains and I can never forget the entrancing loveliness of the picture.

Trillium catesbaei album, an attractive white form that I happened upon recently, is a most lovely plant, indeed, and a fine addition to the shaded garden. *Trillium catesbaei* flowers about April 30th.

The blossoms of *Trillium cernuum* droop and hide beneath the foliage so completely that one may come upon a whole batch of plants in full bloom and never see a flower! That happened to me years ago and as the foliage looked completely in the adult stage, I raised a leaf and was surprised to find a very pretty white bloom beneath it! The pink ovary in the heart of the flower added greatly to its appearance. *Trillium cernuum* bears handsome, very luxuriant deep green foliage. It blooms the last week in April.

A few roots of *Trillium decumbens* were sent me by a kind botanical friend some years ago. My planting of five or six is enough to make an attractive and typical little group. They do increase, slowly, when they are happy.

The fine deep red flowers of *Trillium decumbens* seem to weigh so heavily that their stems lie prone and are unsuccessful in raising them from the ground. They make a very nice little mat of leaves and flowers, and the unusual habit of this trillium makes it an interesting one to grow.

Trillium discolor is one which is admired for its handsome foliage. It has nice white flowers but they are not especially pretty; however the leaves are mottled in such a fashion as to make it a very worth while plant for the woodland garden.

Trillium erectum is one of the commoner types and therefore one of the most plentiful, being native to a very large area. It is perhaps because of this fact that it has produced so many variations. The flowers spread widely open in a most satisfactory way and show to great advantage *Trillium erectum*, the type, bears deep crimson red flowers of an attractive shade and it is a beautiful plant, especially so when grown near the lovely *Trillium grandiflorum*. The contrast is a delightful one. *Trillium erectum album*, which grows plentifully in some sections, provides another pleasing foil to the deep red form.

Trillium erectum comes in pale yellow, also in a yellow whose flowers are attractively shaded with pink which gives a bi-colored effect.

There is a section in the mountains where a form occurs that bears flowers with extra broad petals. These very handsome blossoms are carried on unusually long stalks, which gives them a jaunty appearance. This particular form breaks into many color variations. I found it in red, white, a wonderful crushed raspberry, peach, pink, and in white with an edge of heliotrope. These are of outstanding beauty and have been greatly admired.

The blooming period of *Trillium erectum* is a few days after *T. grandiflorum*, about April 22nd, so they overlap nicely and make a beautiful contrast.

Trillium grandiflorum is, of course, considered the queen of the tribe, and rightly, too. Truly this plant exhibits the most exquisite purity in its lovely white blossom, perfect proportion, and faultless grace of poise and carriage. The flowers turn pink with age. Its blooming period is about April 20th.

Trillium grandiflorum fl. pl. is a worthy sport. It is fully double to the very center and very much resembles a camellia blossom. All who have seen this double form have pronounced it one of the most beautiful of all flowers. It is just as vigorous as the type. Another form of *Trillium grandiflorum* has green striped blossoms and is rather a freak.

Trillium hugeri is a plant of large proportions, a sort of giant in this branch of the family, bearing red flowers that stand upright from the center of its bold dark green foliage. A few plants make a striking group in a shady rock garden.

Trillium lanceolatum is, I am told, a very rare plant and one which has been seen by few people. Quite by accident, while searching for other things, in the far South, I stumbled on a good-sized colony.

It has little to recommend it except rarity, being a smallish plant with rather narrow leaves in several dull shades of green, and its inconspicuous flowers are greenish-yellow and reddish-green. It is not very hardy and a late frost will sometimes nip it a bit. If my little group of three never increases, I shall not mind.

The brownish-red and greenish-tan flowers of *Trillium ludovicianum* are curious rather than beautiful, but they are attractive, and the large bold foliage is remarkably and strikingly marked in more contrasting shades of green than in any other trillium I have ever seen. It is an exceedingly handsome plant and a fine ornament to any collection. It flowers about the 15th to 20th of April.

This one, too, I stumbled on by chance in the far South. It has wintered for several years at Gladwyne but should undoubtedly grow in a sheltered situation. Perhaps it would be wise to rake a few leaves over the ground where it is growing.

Trillium luteum is a well worth while plant with yellow flowers and excellent variegated foliage. I have a dwarf-growing form of this and a tall-growing form. I rather prefer the dwarf grower, for although the flowers are greenish-yellow and not very showy, the foliage by its great beauty makes up for this deficiency. The flowers of the tall-growing form are the better of the two. They come from different localities and flower about mid-April.

Trillium maculatum (formerly *Trillium underwoodi*) is undoubtedly the queen of the variegated leaf section. In fact it is the peer of any variegated leafed plant I ever saw anywhere and the leaves, mottled irregularly a deep green on a silvery background, have much of the wonderful iridescent beauty of some of that lovely tribe of tender terrestrial orchids, the *Anoectochili* from India.

Usually it is a rather dwarf grower. If it never had a flower it would still be a most enchanting plant. But it does bear flowers and very attractive ones too. They are upright and fairly large. Some are a clear golden yellow and some a fine deep crimson, and there are many intermediate bronzy shades. It is therefore quite necessary to select only the clear yellows and clear reds, to get the very best effect. A little mixed planting of these two colored forms makes a thoroughly delightful covering to a small spot of ground on a wooded hillside.

It is best to plant this trillium where it gets thorough drainage. Although it appreciates a moist Spring, it seems to like a drying out in Summer. But it is an excellent grower and self-sows freely.

Trillium maculatum is one of the earliest to flower and blooms about April 12th. The showy leaves, however, appear long before this, in March, and even hard freezes do not seem to daunt this delightful gem.

Trillium nivale is a small and dainty plant that should be in every collection as it takes but little room. It is not showy but it bears very pretty little white flowers.

A species from the Pacific coast, *Trillium ovatum* is an absolute necessity to a trillium garden. With me it comes about three weeks ahead of *Trillium grandiflorum*, and so is a most valuable acquisition. It is a well-proportioned plant and its large, handsome flowers are pure white when newly opened. They last for several weeks on the plant and turn wine red before they fall. *Trillium ovatum fl. pl.* only came to me recently. It is said to be very fine but as yet my plant has not bloomed.

Trillium pusillum has white flowers of medium size. It is not especially distinctive, but any one who likes trillium would want this one, too.

Trillium recurvatum, a newcomer on my hillside, bears deep red flowers, and should bloom this Spring at Gladwyne.

Trillium rivale is the earliest of all these trilliums to bloom, and usually opens its flowers about March 25th. It has been here for years and is a perfect little gem. The tiny plant is only a few inches high but the flowers are large for the size of the plant. They are white and dotted all over with palest pink. Altogether it is a most desirable little plant. Such small plants as *Trillium rivale*, however hardy they may be should be planted in a choice spot where they can be watched so that larger plants will not stifle them.

Trillium sessile, Purdy's best, a California trillium, is a striking and handsome plant, being a large and vigorous type with upright fair-sized ivory white blossoms and deep green foliage which has markings of another shade of green. *Trillium sessile*, the Eastern form, is an entirely different plant from the Western one. It does not seem possible that they can both be called by the same name much longer.

Trillium simile has been introduced to the trade rather recently. It is a fine plant and produces large-sized white flowers above its deep green leaves. In moist rich soil it attains an immense size and self-sows liberally. It usually blooms about April 22nd to 25th.

A few plants of *Trillium stamineum* were sent to me some years ago. It is low-growing with ornamental variegated foliage and neat deep red flowers that stand upright above the pretty leaves, and is a very nice little trillium that is well worth while and does not occupy much space.

Trillium undulatum often goes under the name of *Trillium erthrocarpum* and is popularly named the painted trillium. No matter what it is called, everyone who knows it agrees that it is one of the most beautiful of all the tribe. In the coal peat or leaf-soil of its favorite haunts it is a strong grower and bears large conspicuous flowers. These are white and each of the three petals is marked with a vivid crimson mark. The leaves and stem are a deep bronze or purplish green. I have several plants with four-petalled flowers and five-petalled flowers and with a similar number of leaves per plant. For some reason these are not rare in certain localities. They are less beautiful than the type.

Trillium vaseyi, although for alphabetical reasons it comes at the very end of the list, is to my way of thinking the very noblest of them all.

A plant of large proportions in leaf and flower, it seems to grow and grow, and then when all the other trilliums have done their best, this one comes along about the first week in May and outshines them all. Great velvety broad-petalled deep crimson red flowers, drooping somewhat, emerge from the fat buds so late in the season that sometimes I wonder if they are going to open at all, and each time they emerge they look handsomer than ever before.

Trillium vaseyi fl. pl. A correspondent sent me a superb double flowering

form of this handsome trillium. It is one of my most prized plants. A plant labelled *Trillium vaseyi album* was sent me recently. As this has not yet flowered I shall wait until it does before pronouncing it white.

There are a few other trilliums here but so far they are unidentified. Botanical friends sent me some of the foregoing, others were purchased. Several of my plant collecting trips to the Southeastern States have been undertaken for trilliums. On these occasions I found the beautiful color forms of *Trillium erectum* and *Trillium maculatum*. One auspicious day I discovered the lovely white form of *Trillium catesbaei*, also *Trillium hugeri*. Other times I found *Trillium cernuum*, *Trillium lanceolatum*, *Trillium ludovicianum*, several forms or affinities of *Trillium sessile*, *Trillium vaseyi*, etc., etc. Some of these are new to cultivation.

I am an ardent believer in strict conservation of our native flora. Usually I took but two or three specimens and only where very abundant did I take as many as six.

Trilliums, undoubtedly among the choicest of Spring flowers, to my mind are the most attractive and interesting of them all.

CHILEAN NOTES—I

C R W

IT WAS MY GOOD FORTUNE, for some months in the summer and fall of 1938, to be a member of the University of California Botanic Garden Second Expedition to the Andes. Professor T. H. Goodspeed, Director of the Botanic Garden and leader of the numerous Andean expeditions which it has sponsored, who has recorded many of the details of the first two expeditions in his *Plant Hunters in the Andes*, has kindly granted permission to publish some of my reminiscences. No full account can be given, for my notes would fill several BULLETINS, but as space permits I shall from time to time recall some of the more interesting regions we visited along the coast of northern Chile, and in the Andean foothills.

Our party of six sailed from San Francisco on July 28, 1938, aboard the Grace freighter *Capac*. The departure was hailed by one of the local papers with the headline, "Scientists, Dynamite, Spuds on Long Tour." Had the reporter rechecked at San Pedro, he could have added barrels of gasoline to the dangerous cargo. Forty days were spent aboard the *Capac*, during which we made port in every country along the west coast except Colombia, spending the time ashore in collecting plants and in becoming acquainted with the language and customs of the Latin countries.

Finally we left the ship at Callao, Peru, and after a few days in and around Lima the party split up. Professor Harvey E. Stork, of Carleton College, and young Bob Horton, who now runs a dude ranch in eastern Wyoming, remained in Peru; Walter Eyerdam of Seattle and Alan A. Beetle, then a graduate student at the University of Wyoming, now a professor there, went overland to Buenos Aires, and eventually down into Patagonia; while John L. Morrison, likewise a graduate student at the time, now professor at Syracuse University, and the author spent a few weeks along the Peruvian coast south of Lima, then took ship for Antofagasta, Chile, where their work really began.

The flora of all the coastal region from central Peru to Aconcagua province in Chile (not far north of Santiago) is most curious. Winds blowing over the cold Humboldt Current, which flows from the Antarctic along the western coast of South America, are responsible for high fogs along the coast, which blot out all sunlight for about six months of the year. Here and there, without obvious

reason for the selectivity, these fogs which rest on the coastal hills produce a luxuriant vegetation, most of which, other than succulents, vanishes during the six months of sunshine. Other hills, apparently equally suitable, are entirely barren. It was these isolated oases which we visited, to collect their varied and often extremely beautiful flora.

On arrival at Antofagasta, we found that in spite of the high fog which blanketed the coast and extended several miles inland, the low hills just back of the city were entirely bare of vegetation. We caught the first train (two days later) for Taltal, not many miles to the south, but inaccessible by road. The train bore us inland and upward, over the barren Atacama desert. During the eight-hour ride, the only vegetation seen was a single clump of grass. I had anticipated seeing some of the great peaks of the Andes during the ride, for mighty Llullaillo and Socompa raise their 20,000-foot heads not many miles to the eastward, and in the Rockies I have often seen far lesser peaks very clearly from a distance of fully a hundred miles. But anxiously as I scanned the horizon, all I could see were a few scattered clouds. Finally I asked the carabinero (soldiers served as police in this region, at least, of Chile) who rode as guard on the train, when we should be able to see the Andes. From his long and involved explanation, I finally deduced that they would not be visible till we reached the neighborhood of Santiago, more than two days' journey to the south. It was not until much later that I realized that he was telling me about the town of Los Andes, and that the mountains are always known as "la alta cordillera." Perhaps the peaks were offended by my ignorance, for they remained out of sight not only that day, but throughout my stay in Chile, and it was only when I was aboard ship in Valparaiso harbor, about to return to the States, that I had one glimpse of Aconcagua.

At dark we arrived at the nitrate town of Santa Catalina, to learn that the "connecting train" would leave the following afternoon. Here, at an elevation of 8000 feet (where, in the Rockies, one would find a wealth of plants, even in the more arid ranges), was not a trace of vegetation. I was told that it never rained there, but snowed occasionally. Eventually our little two-car train made up its mind to depart, and bore us down to the seaport of Taltal, through deserted nitrate workings. As we neared the coast, an occasional plant appeared, and our hopes grew. We found next day that they were well justified, for here we had some of the richest collecting of the entire trip, while we waited for our Chilean companion, Rudolfo Wagenknecht H., to join us.

After spending the first morning making necessary arrangements, we hired a car to drive us back along the railroad in search of the plants we had glimpsed the previous afternoon. Only three miles from town, we left the car and struck up a ravine toward fog-covered hills. At first we went over a gravelly river-bottom (dry, of course), where there were few plants except dwarf composites. Then came wide patches of a *loasa* with broad succulent leaves and the habit of growth of a melon. The flowers of this genus and of the related *Caiohpora* are most remarkable: five spoon-shaped petals surround a crown exactly like the Standard Oil trademark; normally the petals and crown are of different colors (white, yellow, orange) with a touch of red on the top of the crown. Alas, these beauties are the only plants that have ever poisoned me. John and I at first approached them barehanded, and found the leaves covered with stinging hairs which raised pustules all over our hands, causing much discomfort for fully a week. After this experience we approached *loasas* circumspectly, and handled them only with leather gloves and improvised pincers. But their beauty is so great that if ever I come upon seed of them, I shall gladly risk the tortures they can inflict, for the joy of seeing their magnificent flowers.

Shortly after our perilous encounter with the first of the many *loasas* we

were to see, we came upon a tiny member of the Boraginaceae, apparently *Cryptantha argentea* for which Clay has high praise, although it was growing on a hillside with no cliffs in the vicinity. It was less than three inches high, with profuse fine white flowers. Up the slopes a bit, here and there we saw a deep pink amaryllid, while the white loasa was everywhere, and was joined by a particularly vicious yellow one. Scrambling around the crags (John had found enough to keep him busy lower down), I found what passes as *Alstroemeria violacea*, introduced to cultivation by this expedition. Dr. H. E. Moore tells me that the genus is in sad confusion, so that hereafter I shall not bother to mention specific names, which are probably misapplied. There were a lone plant of a salvia with ultramarine flowers half an inch long, a fine purple schizanthus, and, mostly on bushes, a "nasturtium" (? *Tropaeolum tricolor*), a very fine sprawler with tiny leaves and inch-long almost closed flowers in enormous masses, varying from yellow to vivid scarlet, with the ends of the petals tipped chocolate. This would be a prize in any garden, but we could never find seed of it. In a scree there were a few plants in bloom, almost always growing under bushes, of *Leucocoryne ixioides*, not nearly as startling as catalog descriptions had led me to expect—at first I thought it was a scilla. As no new plants appeared higher up, I dropped to where John was working at the press, and in the next hour and a half we gathered a white monocot looking much like leucocoryne; a gorgeous shrub with cup-shaped yellow flowers two inches across; *Cleome chilensis*; a nolana with big blue morning glories (this genus, plentiful and varied along the coast, and always beautiful, is virtually unknown in gardens); assorted composites which apparently had nothing of special attraction, for they are merely mentioned in my notes; the first viola (of which more later); two tallish Malvaceae; a shrub with one-half inch five-lobed blue flowers, apparently nolanaceous; an odorless white heliotrope; a tiny stachys; a sub-shrub with orange flowers suggesting relationship to the lantanas; an oxalis with a long slender naked trunk above a woody root, with very fine yellow flowers, occasionally red-striped (? *O. bulbocasicum*); and a solanum, up to eight inches high, with thick glossy leaves and brilliant clusters of purple flowers. How much more there was to collect we could not investigate, for our time was up and the car was waiting for us.

On other days we visited elsewhere among the ravines branching off from the valley through which the road ran. In the gravelly floor of a wide valley we found a tiny annual alstroemeria, only three inches high, with the lowest tepal minute, the others white to lavender, with a yellow spot and brown dots on the two uppermost. Plentiful seed was collected, but I have never learned whether it took to cultivation; alstroemerias seem extremely difficult from collected seed. Among the other plants were a bright orange hypericum, sprawling and few-stemmed; a tiny composite with tight rosettes an inch across and intense yellow flowers much larger than the plant, bright red in bud; a yellow lycopersicum with shiny leaves; a tall white argemone; a portulacaceous plant with thick red spathulate leaves and tiny yellow flowers; the first of the strange calandrinias known as "pato de guanoco," which make rosettes of fleshy basal leaves, often red-spotted, and raise a naked stem to as much as two feet, atop which, in this case, were brown-stained buds, and flowers one and a half inches across, of intense red with yellow stamens; another oxalis with enormous pale yellow flowers, as large as those of the calandrinia.

(To be continued)

NORTHWEST UNIT

The officers of the Northwest Unit of the Society for 1956 are:
Regional Chairman:

Dr. J. D. Barksdale, 13226 42nd N.E., Seattle 55, Wash.

Vice-Chairmen in Charge of Programs:

Mrs. A. M. Sutton, 9608 N. Beach Drive, Seattle 7, Wash.

Dr. A. R. Kruckeberg, 1251 18th Ave. No., Seattle 2, Wash.

Secretary-Treasurer:

Mrs. Alton H. Du Flon, 3223 Perkins Lane, Seattle 99, Wash.

Corresponding Secretary:

Mrs. Gregory Morris, 3858 Hunts Point Road, Bellevue, Wash.

The January meeting was held at the University of Washington Arboretum. The chief topic of discussion at the business meeting was our concern over the possibility of a bridge approach being put through the Arboretum; it was emphasized that we must continue the fight to keep the Arboretum intact. The program took the form of a panel discussion entitled "Exploring for Alpines". The territory covered was Asia, with four members outlining the explorations and writings of Forrest, Farrer, Kingdon Ward, and others.

At this meeting we had what was for the most of us a first look at the first published volume of "Vascular Plants of the Pacific Northwest", which has as one of its four authors Dr. Leo C. Hitchcock, a member of our unit. The present volume, actually the last of a proposed series of five, covers Compositae. It is written by Arthur Cronquist, and is beautifully illustrated by John H. Rumely.

Another unusual pleasure at this meeting was the unprecedented "hostess" committee made up of our bachelors, who served excellent refreshments.

Our business meeting in February was again concerned with the Arboretum. An unprecedented early November freeze brought devastation to gardens throughout the Northwest, and the damage was extremely heavy in the Arboretum, where great numbers of rare and valuable plants were destroyed. It was decided to donate money toward the replacement of plants. Dr. Richards B. Walker, of the University of Washington Botany Department, was our guest speaker and brought us much helpful information in his talk on "Soils and Nutrition Problems in Northwest Gardens."

HELEN MORRIS

CLARE W. REGAN

Mrs. William P. Regan, long a contributor to the BULLETIN and to other horticultural publications, passed away in Butte, Montana, last July at the age of seventy-three. Her small rock garden was filled with treasures from all parts of the world, for she had corresponded and exchanged seed with enthusiasts in many countries, and was most skillful in growing extremely difficult plants. Her health for many years had not permitted exertion at high altitudes, but she was keenly interested in the western flora, and collected and disseminated such rare species as she was able to collect, among them *Phlox bryoides*, which grew just outside her yard. She was a member of many important horticultural organizations. While she had been unable to write for the BULLETIN recently, her articles in earlier volumes constitute an important contribution to our literature on the culture of alpines.

EMILY S. LOWMAN

It has been nearly a year since my beloved friend, Emily Siegrist Lowman, of Columbia, Connecticut (near Willimantic), passed to the Great Garden Above. She was the wife of Frederick Lowman, Sr.

If ever there was a green thumb gardener, she deserved the term. She had a large rock garden full of many rare treasures that she always shared with her friends, and collections of hemerocallis, Siberian iris, oriental poppies, tuberous rooted begonias, and geraniums. Her primroses were her pride and joy. Her garden was adorned with unusual evergreens, wisteria, roses, and a lovely magnolia. Near three beauty bushes, her extensive collection of hostas, numbering around seventy-five varieties, was planted.

Emily Lowman was very well-read, and had accumulated a library of more than a hundred volumes on gardening, ranging from Farrer to Louise Beebe Wilder. She subscribed to nearly every garden magazine in the United States and England, and belonged to several garden societies. She directed a Rock Garden Robin, and belonged to several other round robins. Although an invalid for the last five or six years of her life, she still contributed to the robin letters, and continued her interest in her garden.

Emily was a good mother and homemaker, and had three children, four grandchildren, and one great-grandchild at the time of her death.

I well remember the delicious strawberry shortcake she made on one of my visits, and the blonde cocker spaniel tagging at her heels as she showed me around the garden.

She lived for her garden and for the coming of spring. Her gift plants thrive in many gardens, living memorials to Emily. She will always live in the hearts of her friends.

DOROTHY TRUDO STILLWELL

* * *

Though Daffodils go dancing up and down the slopes, and Anemones . . . be making everywhere stars of beauty, yet the heart of the weather is still winter at its shrillest, iciest and most adamantine.—FARRER.

SALMAGUNDI

Weather has been all too often in the headlines during the past year: hurricanes, floods East and West, blizzards in the Panhandle, drought in many regions, the worst winter in Europe in a hundred years. But one bit of weather that has not received much publicity in the East is the disastrous cold spell that struck the Pacific Northwest last November. The reports that we have received vary in detail, both of temperature and of duration, as is to be expected over a wide area. Temperatures in some places fell well below zero, but moderated quickly; in others, as around Portland, apparently the thermometer lingered just above zero for at least ten days. Some gardens received protection from as much as a foot of snow, while others were bare. The damage to plants was tremendous, although as yet its full extent cannot be determined; it was particularly severe because there had been no earlier cold weather, trees were still in full leaf, and growth active in most plants. Carl Starker has written that he hardly knows how to prepare his new spring catalog; L. N. Roberson Co. has temporarily withdrawn its advertising from the BULLETIN, until it can determine which plants have survived in saleable condition; Izetta M. Renton reports that her rhododendrons have suffered to the extent of at least \$6000 in losses, chiefly among the larger plants. It is feared that many nurseries will be forced out of business

because of the overwhelming losses. Beside all this, our tale of loss from drought seems picayune indeed.

* * *

Too late for inclusion in the January number, word was received of a proposed expedition in March and April to southern and western Anatolia, in Turkey, by Dr. Peter Davis, who has made many other collecting expeditions to this region as well as to Cyprus, Crete, and Persia, together with Mr. Oleg Polunin, who was a member of a recent expedition sent by the RHS to Nepal. Their purpose is to collect bulbs, in which this region is particularly rich.

We are informed that Will Ingwersen has postponed his expedition to the Andes because his father, W. E. Th. Ingwersen, one of the most renowned British plantsmen, must undergo an operation for cataracts in the near future, and someone must be at hand to supervise their nursery. It is to be hoped that the postponement is only until next season.

* * *

It was hoped that mention of some nurseries dealing in alpine plants, in January, would lead readers to write us concerning establishments of which we were ignorant. To date the situation remains unaltered, except that we must add Tucker and Son, 8191 N. Wayne Road, Plymouth, Michigan. They do not at present issue a catalog, but hope to do so in another year, and are building up a collection of very choice material.

James E. Mitchell announces that he sent out his last catalog in 1955, but that part of his stock of plants has been taken over by Donald Allen, Sky-Cleft Gardens, Camp Street Extension, Barre, Vermont, who is sending out an interesting catalog this year.

Mr. C. S. Van Houten informs us that he may be able to spare a few of the rare daphnes which he described so fascinatingly in January. His address is 1043 Fairport Road, Fairport, N. Y.

* * *

We regret that seeds sent by several contributors to the Seed Exchange did not arrive in time for inclusion in the list, although the copy was not sent to the printer until December 6, three weeks after the announced deadline. This delay until the last possible moment, because seeds were still arriving, was in large part responsible for the BULLETIN'S appearance a week later than scheduled.

* * *

A recent news bulletin revealed that the Japanese have erected a television tower on top of Mt. Fjui. Even the Sacred Mountain, it seems, must be violated in the interests of "progress".

* * *

If all goes well, the long-promised ten-year index to the BULLETIN will be distributed with this number, along with the index to Volumes 11 and 12. We are indebted to Mr. and Mrs. Henry S. Fleming for completing the arduous task of compiling the ten-year index, which Mr. Nearing had been forced to abandon because of eye trouble. To all three go the thanks of the Society for their labors.

* * *

Perhaps a personal note may be admissible to this column, in which occasional reference has been made to activities at Cornell. We are on the staff of Ithaca College, in fact are the whole Mathematics Department there, but for several summers have been working on the rehabilitation of the large rock garden at Cornell University, which had been rather neglected since the time Warren Wilson, of Saxton and Wilson, left there, about 1940 as we recall. This work was completed during the past summer, so far as a rock garden can ever be regarded as "finished", and the regular staff of the Department of Floriculture is

undertaking its maintenance. At the moment our only connection "on the hill" is that of friendship with the men with whom we have been associated during these past summers, and any statement we may make about activities there will be entirely unofficial.

Very shortly after we began this work at Cornell, requests started coming in for our catalog of rare greenhouse plants, and we began to wonder whether we were expected to steal specimens from the Conservatory and offer them for sale. Eventually the mystery was cleared up: Ernest Chabot, without consulting us, had listed us, in one of his books, as a dealer in greenhouse material, whereas we have never offered such plants for sale, nor, in fact, had any greenhouse other than the unheated alpine house. We have protested to the author, who apparently has done nothing to correct his error, for requests for the catalog still pour in—and into the waste basket.

It may be well to add that because of the drought during the past three summers, and other difficulties, it has been impossible to maintain here a stock of alpinists for sale. Perhaps at some future time we may again be able to offer small stocks of plants unobtainable elsewhere, but no promise can be made at present.

* * *

It is occasionally suggested that more articles suited to beginners be included in the BULLETIN, which leads to the question of what articles beginners would prefer. Lists of plants are hardly suitable, for what is easy in one garden—or in many—may prove extremely difficult elsewhere. Directions for construction of a garden are probably better given in handbooks on rock gardening. We shall welcome suggestions, especially from the beginners themselves, as to suitable topics.

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Comments on articles in the BULLETIN, with expression of likes and dislikes, will also be appreciated. An effort is made to steer a middle course, with sufficient variety so that those who dislike one type of article may find others to their taste, but so far we have been working largely in the dark, and should greatly appreciate critical comments from readers.

Needless to say, we should also like to have many more articles submitted for the BULLETIN. Have YOU written one yet?

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