

BULLETIN

of the

AMERICAN ROCK GARDEN SOCIETY

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No. 4

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A ROCK GARDEN IN CANTERBURY

H. STEWART WACHER, *Canterbury, England*

ACCORDING TO THE EXPERTS who write on the construction of a rock garden, it is always necessary to draw out a plan to scale before one begins the job. This sounds very good in theory but in practice it is difficult to act upon, for while one may have an idea of what one wishes to build, it is another matter to put it on paper unless one happens to be a professional surveyor. In the first place, no two sites are alike and one needs must make the most of what is at hand. Of course the most important point is to select ground which consists of different levels if such is available. Equally important, it should be sufficiently distant from large trees, especially those which are surface-rooting.

It is now some twelve years since I moved into my present home, after being bombed out of my old one, and I was very fortunate to find a much better and larger garden than I had before, and moreover one which contained a small bank some four feet high covering an area of about 12x24 yards running in length from north to south. I at once decided to build my rock garden here, and the only plans I kept unhatched in my head, developing my ideas as I proceeded with the job, both with regard to the contours of the mound and the rocks at my disposal. Half of this bank was already grassed; I retained this for the most part, and in it I planted thickly many dwarf spring-flowering bulbs, such as crocus, narcissi, snowdrops, scillas, and grape hyacinths. Nothing could look better or more natural when they are in flower, although of course the grass must not be cut until the end of May when the bulb foliage has died down.

The next stage was the rock garden proper, and this I devised as a rough 6 in reverse. At the foot of the grass-bank—the lowest level—was the obvious place for a lily pool, and of course below the pool must be a bog garden to take the overflow water. Here the job began, giving me a quantity of earth for building a bank beyond the bog garden as the foundation of the rockwork, for my plan devolved upon constructing a second bank beyond the grass bank, so that the pool would lie in the bottom of a hollow. My soil consists of much maligned clayish loam with chalk, but since our summers are very hot and dry, this was an advantage from a moisture-retention point of view, provided that it was adequately drained against stagnation from winter wet. I dealt with this by mixing gravel with the soil as I went along, and also by placing a longitudinal pile of old boiler clinker beneath the center of the main bank.

The main bank itself required a vast amount of soil, but this was obtained by digging out and enlarging my main drive close at hand, a job which took me unaided some eight months of all my spare time. Having completed the bank (at the northeast end to commence with), the rocks were put in, beginning at the bottom, after laying a length of low-step paving between the edge of the grass and the lowest rocks, and continuing it around the near margin of the pool as far as a gravel path which needed to be retained through the whole area of rock garden. Behind this section stands a very old and large yew tree which adds a pleasant background without overhanging. On the southeast portion, which receives less direct sun on account of its slope, I decided to make the construction suitable for ericaceous plants, which needed total elimination of the chalky natural soil. Consequently the banks on this aspect were built up by dumping all the garden rubbish on the site for a couple of seasons—in fact a large compost heap—and when it had settled cart-loads of leafmould from nearby woods were mixed with coarse sand and used as a top surface a foot deep. The rocks were then put in, but for a year or so afterwards it was necessary to keep adding more leafmould in places where subsidence occurred. The final result is excellent, and makes a happy home for many dwarf rhododendrons, heaths, pernettyas, gaultherias and other lime-hating plants, especially as there is a row of tall holly trees on the south and west aspects to keep off excessive sun and wind.

Before leaving this part of the garden, a few words concerning the pool and bog garden, which was dug in one piece to a depth of $2\frac{1}{2}$ feet. A small wall in double curves was built across the centre of this area, with the top at the same level as the surrounding path of crazy paving, thus dividing the pool from the bog. The pool section was lined throughout with three inches of concrete mixed with "Pudlow" to make it water-tight, and two sides were sloped to give shallow water at the edge of the bog garden, whereas the sides abutting the rocks and the path were left sheer, giving a depth of water of about two feet after allowing for the concrete and loam on the bottom. The bog garden was also lined with a similar layer of concrete except that the surrounding walls were left vertical, and at one end was built an overflow trap draining into a soak-away, so that the water in the bog should never remain higher than six inches below the surface of the soil, which consists of leafmould, loam and coarse sand. The bottom of the bog was covered with old bricks six inches deep, over which laid a cover of turves bottom upwards, before the soil was added. At one edge I sank vertically a piece of 3 inch section glazed piping to act as an inspection point for keeping a check on the level of water in the bog; for, being in full sun, in the height of summer when the plants are in full growth they absorb a great deal of water, which can often be exhausted in spells of hot dry weather, but can easily be renewed by running a hose into this pipe.

A garden path runs across the centre of the rock garden dividing it into two parts. The section on the north and east of this path was completed first in about two years, after which I turned to the southwest area which asked for different treatment since there was no grass bank to interfere with its general layout. Here I continued the alignment of the ericaceous bank to the south corner, converging it into banks of ordinary loam as I swung toward the west, and then from west to north I dug out a further hollow and threw the soil backwards, thus bringing the completed bank up to a higher level, and giving me a small circular area at path level in the centre, which is reached by a stretch of crazy paving from the main path. In the centre of this circle I put a small bog garden lined with concrete to within six inches of the surface; the intervening gap allows excessive water to soak away into the surrounding subsoil. An inspection



Dr. H. S. Wacher

A general view of the rock garden, with the scree bank on left, and the pool in middle distance.

pipe was also inserted at the edge of this. Facing this area at the foot of the ericaceous bank I built a small alpine turf bed which has been a great success for growing many alpiners which require moist rich well-drained soil, such as Asiatic gentians, nomocharis, soldanellas, dwarf ranunculi, cyananthus, dodeca-theons, dwarf thalictrums, primulas and many difficult bulbs including gagea, bulbocodium, merendera, rhodohypoxis, dwarf narcissi and leucojums, and terrestrial orchids. The main details in the construction of this bed are as follows: the whole site was cleared to path level, at the front of which a wall of large rocks was built up to about 18 inches high. The remaining sides were also built up with large rocks, but to greater heights in order to contain the higher levels at the back. The empty space was then filled to the top of the front rocks with old compost which was treaded down firmly leaving some six inches of cavity. On top of this was spread two inches of path gravel, and the surface was then completed with a mixture of equal parts turfy loam, leafmould and sandy gravel, taking care that no lime was included. A few small rocks were set at random into the final surface, which was completed on the level, or if anything, sloping inwards, so that water would run into and through the bed rather than off the surface, which would occur if it sloped outwards. I consider that the layer of gravel is the most important part of this structure, for it sets into a consistency resembling porous rock in which roots of the plants will find moisture while the crowns will be drained rapidly of any surface wet; also deep-rooting plants will get through it into the permanently moist compost beneath. This method of construction is an attempt to reproduce the natural conditions found in the mountains, where the alpine turf, more often than not, consists of a thin layer of soil (produced by the remains of rotting vegetation throughout the ages, and



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A corner of the rock garden in springtime.

mixed with grit and small stones brought down by melting snow each spring) spread over the rock formation beneath.

The forefront of the remainder of this circular area has been built up as scree. Since most of the plants which are grown here are very small it is an advantage to have them close to the eye level in order to appreciate them fully. Consequently I have arranged that the average level of the surface is between three and four feet above the path. From ground level the soil was dug out for some 3-4 feet inwards and the face was built up vertically with rocks. The space within was then filled to about 9 inches below the final surface with weathered coke refuse from the domestic boiler. On the surface of this was spread a 3 in. covering of gravel, and the whole treaded down firmly, thus forming a water-permeable layer which keeps the foundation clean and able to drain rapidly. On the gravel was spread a further layer of equal parts coarse sand and sifted leafmould 3 inches deep. The top was finished off with fine half-inch chippings, one half the area consisting of lime, and the other half of granite. A few small blocks of rock were partly buried here and there on the surface, and the top of the retaining rock wall was also built up of tufa blocks. As with the turf bed the surface has been kept more or less level or sloping inwards so that water will run through the area and not off it, otherwise soil erosion takes place, and insufficient water reaches the roots of the plants.

It is remarkable how many plants can be grown successfully in this section without any artificial covering in winter, plants which are said by many to succeed only in the alpine house, where they never retain the fascinating dwarf compact structure that they possess in nature and also in this scree. The only covering that I have to give them is wire netting to prevent birds from pecking off flower buds in spring or pulling up small plants in winter. The most valuable

material is the tufa rock which forms the ideal home for the rigidly saxatile species, for it is possible to drill or chip holes in it for the insertion of plants; when doing this it is important to keep the diameter of the hole as small as possible but to be sure it is deep enough to take the roots spread well in. Some care is required in planting, and I use a small piece of hard wood to press a moist mixture of grit and leafmould firmly in with the roots, and then plug the opening around the collar of the plant with a piece of tufa that has been chipped out of the hole. By using tufa on top of the retaining wall, one has two surfaces available. It is possible to place many plants, which object to wet conditions around them, on the vertical face, and so to ensure the natural conditions. When cutting holes for this purpose I always direct the long axis slightly downward so that water assists in firming the plant; otherwise it might tend to wash the plant out before it has become firmly established. If one raises these plants from seed they can be inserted into the smallest holes or crevices as soon as they are large enough to handle, and they do even better when started away thus.

This scree bed forms a rough semi-circle from north through west to south. Although this layout was originally a question of merely building to the general plan of the path, it has turned out to be more important than ever entered my head at the time. The whole area here is of course clear of overhanging trees and is exposed to full sun throughout most of the day during the summer months. According to many writers on the subject this should be the ideal, but in practice is far from it, at least in my little corner of the world. Many of the plants I grow here, including many collected in the mountains of central Europe, simply will not tolerate our summer heat. Although I have been told by many experts that they are sure to die in our winters if grown here without any artificial covering, I find that they come through winters of all varieties without turning a hair, only to be burnt to death in our summers in spite of regular waterings in the evenings during hot dry weather. With this experience the different aspects of my scree have been a great aid, for it is possible to put plants on the north-facing aspect where they do not suffer from such severe exposure. This may sound questionable since the whole area is fully exposed, but in practice those plants on the gentle southern slopes can have a small piece of rock (even an inch high) placed behind them; also the angle of incidence of the sun's rays strikes them on the side, whereas those which are grown on the northern aspect receive the angle of incidence straight into the centre of the crown, which is too much for many species. This applies most emphatically to all the kabschia group of saxifrages, and to a lesser extent to the engleria group, which will however stand more sun. The tufa rock is ideal for both these groups of plants, for they flower well, keep their natural compact forms, and look far better than when grown in pots in the alpine house, where the foliage becomes too luscious and the flowers drawn up on spindly stems; the notoriously difficult *Saxifraga lilacina* grows particularly well in the vertical face of tufa with its back to the sun. Other plants very satisfactory on the south side of the scree or on the vertical face of the tufa include *Ranunculus bilobus* and *R. crenatus*, *Saxifraga oppositifolia*, *Primula rubra*, *marginata*, *integrifolia*, *carniolica* and *tyrolensis*, *Androsace carnea*, *obtusifolia*, *villosa*, *helvetica* and *hausmannii*, *Calceolaria biflora* and *sinclairii*, *Daphne striata* and *verlotii* and especially the many dwarf saxatile ferns which are ideal for the crevices between the rocks of the retaining wall. On the north side, where the sun is more direct, will flourish the many dwarf cushion dianthi, drabas, saxatile artemisias, asperulas, *Campanula morettiana*, *raineri*, *herzegovina nana*, *aucheri*, *allionii*, *tommasiniana* and *waldsteiniana*, *Potentilla nitida*, difficult achilleas and dwarf penstemons, while in crevices of the retaining wall *Acantholimon androsaceum*, *creticum* and *venustum* make large healthy mounds of prickly



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A view of the garden from the house, looking across the rock garden and pool to the iris garden; Canterbury Cathedral visible through the gap between trees.

foliage and flower well. Finally many of the difficult bulb species such as crocus and the dwarf fritillaries, tulips and narcissi will be quite happy and seed themselves.

To conclude with a description of the general planting of the rock garden as a whole: many dwarf conifers have been planted around the highest parts of the banks to give a good background, but I have made the mistake of not allowing sufficiently for their growth. Although quite small when planted, now after twelve years many have reached out to impinge upon their neighbors, tending to hide the beautiful forms of the individuals. Other dwarf shrubs which do well include daphnes, cytisis, genistas, potentillas, salix and ononis, and in the backgrounds clumps of smaller-growing lilies complete the picture.

And now I feel that I must end these notes of an amateur's rock garden, in which no other than myself has had a hand from the time of commencement to this day, and where so many hours are passed throughout each year, enjoying the thousands of odd small plants it is possible to grow in a confined space, many of which recall happy days on holiday in the mountains.

* * *

There are many plants I positively dislike, many that I admire without loving. But towards all the plants I love, I do honestly affirm that I present an equal front, and make no account of novelty or rarity, but cherish the Wood-Anemone as heartily as any new Daffodil or Poppy from the roof of the world.

— Farrer

SOME NOTES ON NEPETA AND DRACOCEPHALUM

GORDON P. DE WOLF, *Bailey Hortorium, Cornell University*

IN CONTRAST TO THE members of the genus *Stachys*, about which I wrote last winter, Reginald Farrer much approved of members of the genus *Dracocephalum*, even the taller ones, for cultivation in the rock garden. As I have recently studied the cultivated members of this genus and of its close relative, *Nepeta*, a few notes, nomenclatural, taxonomic, and appreciative, might perhaps be of interest. [Cf. *Baileya* 3(2): 97-107; 3(3): 115-128, 1955]

One of the most vexing problems encountered in dealing with these plants is the inconsistency of application of generic names. Certain species, seemingly without reason, have been indiscriminately listed as either "*Nepeta*" or "*Dracocephalum*". After a rather careful study of the cultivated species it seemed to me that the following characters (arranged in tabular form to facilitate comparison [cf. *Baileya* 3(2):103, 1955]) adequately distinguish the two taxa involved:

Dracocephalum

At least the median posterior calyx-tooth generally expanded; if not, the calyx-teeth relatively broad, with 3 longitudinal veins, the cross veins conspicuous.

Calyx-teeth straight, or essentially so.

Mouth of the calyx plane or slightly oblique.

"Shoulder" at the base of the calyx-teeth.

Bracts frequently pinnately divided, with apiculate tips, or sublately toothed.

Nepeta

Median posterior calyx-tooth never expanded, the cross veins of the calyx-teeth not conspicuous without considerable magnification.

Lateral calyx-teeth frequently incurved.

Mouth of the calyx ranging from plane to strongly oblique.

No such shoulder present.

Bracts entire, with or without a terminal apicule.

In addition, I suspect that all of the plants which have been called *Dracocephalum*, but which possess aromatic foliage, will be found instead to be *Nepetas*.

Most nepetas are too large for the alpine garden, although their abundant production of generally showy blue flowers, their vigorous growth, and their clean foliage make them valuable for the perennial border. Some of the Himalayan species, however, are small growers and would undoubtedly be useful in the rock garden. Among these are *Nepeta raphanorhiza* and *N. nervosa*, which grow from one to two feet tall and have dense, spikelike inflorescences which may be four inches long. Plants of *N. nervosa* in our gardens, started from seed sown last spring (1955), bloomed at the end of September and in early October of the same season. We have, of course, not had them long enough to judge of winter hardiness.

The only other species commonly available which might find places in the rock garden are *Nepeta mussinii* and its reputed hybrid (with *N. nepetella*) *N. x faassenii*. The true *N. mussinii* is not as common in the trade as one might suspect, for the name is frequently misapplied to the hybrid. Since the whole confusing story has been worked out in some detail by a number of students, it may not be amiss to quote from a recent article in *Baileya* [3(2): 103-105, 1955] where the story is summarized:

"For somewhat over 100 years it has been known to botanists and horticulturists that all was not well with the plants that were passing under the name *Nepeta mussinii*. The true species was introduced into western Europe from the Caucasus about 1803 by the Russian explorer Count Apollon Apollonovich Mussin-Pushkin. The taxon was formally described from plants growing in the Botanic Garden at Halle by a student of Kurt Sprengel in 1806. The original species, which propagates readily by seed, is a low (not more than 30 cm. tall) rather diffuse plant with gray-pubescent, cordate-ovate leaves.

"In 1891, however, there appeared an article in the French horticultural journal "Revue Horticole", accompanied by a colored illustration, describing "*Nepeta mussinii*" — but this was a different plant from that which had been grown in the Botanic Garden at Halle earlier in the century. This spurious *N. mussinii*, which is now recognized nomenclaturally as *N. x faassenii* Bergmans ex Stearn, differs from the true *N. mussinii* Sprengel ex Henchel in its more strict and erect habit and in the shape of its leaves, which are narrowly ovate or lanceolate, with a more or less cuneate base. It is sterile, and may be propagated by asexual means only. In this area it seems to be a less robust plant than *N. mussinii*. At the present writing, May 10, a plant of *N. mussinii* has been in bloom for more than a week, while other species of *Nepeta* have only just begun to put forth new shoots.

"In 1944 E. V. Floto, Assistant Curator of the Botanical Garden at Copenhagen, published the first of two papers dealing with the taxonomy and cytology of "*Nepeta mussinii*." Floto found that there were two distinct taxa passing under the same name in Denmark—apparently the same two that have been confused in England and the United States. Though hybrid progeny were not raised experimentally, Floto believed that the second parent of *N. x faassenii* was *N. nepetella*, a rather nondescript species from southern Europe.

"As early as 1832-36, Bentham had noticed that hybrids of *Nepeta mussinii* were wide-spread in cultivation. He suggested that *N. grandiflora* Bieberstein was the second parent. While it is true that much of the hybrid material in cultivation is referable to *N. x faassenii*, there are several specimens in the Bailey Hortorium which appear to represent plants intermediate in character between *N. mussinii* and *N. grandiflora*. They have the calyx shaped as in *N. grandiflora*,

but pubescent as in *N. mussinii*; they have the leaf of *N. mussinii*, and appear to be intermediate in height between the two putative parents.

"There is a good deal of variation in plants which appear to be *N. faassenii*, and it appears that careful breeding studies with *N. mussinii*, *N. nepetella*, and *N. grandiflora* will be necessary before we can be sure of the exact stature of these various clones."

Turning now to *Dracocephalum*, there is a number of species, common and uncommon, which are not only suitable, but desirable, for the rock garden. The commoner sorts may be passed over quickly, noting only their names and principal characters. Here may be mentioned *D. moldavica*, native in Asia, but early escaped from cultivation in Europe, and now in some parts of the United States. This is an annual or biennial growing to 2 ft., with simple, though toothed, leaves, and blue or whitish flowers less than an inch long. Related to this is a species commonly called *D. ruprechtii*, though its true name is *D. bipinnatum*. This is a perennial, growing to perhaps 18 in. tall, with blue corollas to $1\frac{1}{3}$ in. long, about twice as long as the calyx. Cultivated material that we have seen bearing this name has proved to be *Hyssopus officinalis*, but judging from pictures and descriptions, the true species should be a good garden subject.

D. arguense is dubiously distinct from the older *D. ruyschiana*; we are treating it as a variety, *D. ruyschiana* var. *speciosum*. The two taxa are perennials, to 2 ft. tall, with linear-lanceolate leaves. These are perhaps not spectacular things, but they are good growers and produce their rich blue flowers freely in June. In the true *D. ruyschiana* the corollas are about an inch long, while in the variety *speciosum* the corollas range from $1\frac{1}{3}$ to 2 in. long. *Dracocephalum austriacum* is similar to these, differing only in the pinnate leaves and the presence of a light pubescence.

Dracocephalum nutans and *D. thymiflorum* are annual or biennial species native in northern Europe and Asia, and are not uncommonly offered in the trade. The flowers are small, and pale in color. They have little to recommend them as garden subjects.

Turning now to the more unusual species, two or three of these can be dispensed with as easily as the foregoing. *D. parviflorum*, our only native species, ranges over most of the country, but apparently is not common. It is an annual or biennial growing to 30 in. tall. The inflorescence is almost head-like, with huge bracts and relatively insignificant flowers. Judging from herbarium material, it is not showy. *D. heterophyllum*, on the other hand, is a white flowered species native from China to Turkestan; it appears to be a pleasant thing, though the British gardeners do not seem to be too enthusiastic over it. Finally, in this lot, *D. fruticosum* might be interesting. This is supposed to be a tiny thing, with elliptic leaves about $\frac{1}{2}$ in. long, but the thing offered in the trade under this name appears generally to be a rather coarse Nepeta.

But there are some spectacular things among the *Dracocephalums*, and while they are not common, they are well worth hunting for. Many of them seem to be available only in England or on the Continent. Some of them, to be sure, are high mountain things and may resent our hot summers, but others are of easy cultivation and richly deserve to be better known.

Dracocephalum grandiflorum, perhaps by a happy coincidence, was the first species which I met in the garden. The plant forms a dense mound of dark green leaves, perhaps 6 in. deep, and from this in early June a multitude of flowering stems rise, bearing the rich dark blue flowers 8 or 10 inches above the leaves. These flowers may be up to $1\frac{1}{2}$ in. long, and frequently a few stems will be produced in late August and September. This is an old species, known to Linnaeus from material communicated to him by J. G. Gmelin from his explorations in the Altai in 1733-1743. It grows easily with us in full sun, in the front

of the perennial border. Two related species from the high Himalayas are *D. bulatum* and *D. speciosum*, the latter an alpine with rather insignificant flowers, but with huge papery bracts which are stained purple.

The glories of the genus, however, are a group of species from the eastern Himalayas, between Nepal and western China. They are apparently related to *D. bipinnatum* and *D. heterophyllum*, but far surpass them in beauty. While I have seen living material of only one of them, and this the least spectacular, the herbarium material that we have of the other two promises so much that I am making a strong effort to get all of the species for our collections here.

Dracocephalum tanguticum was described by Maximowicz as early as 1881 from material collected in western Kansu by Nicolai Przewalski. This is an erect plant, probably to 2 ft. tall, with pinnately parted leaves and blue corollas to 1 in. long. It is apparently rather variable as to intensity of coloring, but good strains are well worth having.

It is George Forrest, however, whom we have to thank for the two outstanding beauties of the group. *Dracocephalum forrestii* and *D. isabellae* are both high mountain plants that may well be difficult with us, yet they are more than worth the trouble. Both grow to perhaps 20 in. tall, both are white pubescent and both have rich blue-purple flowers. They differ in that while the leaves of *D. forrestii* are pinnately parted, those of *D. isabellae* are seemingly pedately parted, and though the corollas of the former are only about 1 in. long, those of the latter are nearly 2 in. in length.

The last species which I shall mention is no relation to these, but belongs to a group of creeping sub-shrubs native in the Caucasus. This is *Dracocephalum botryoides*. The whole plant is not over 6 in. tall and makes a mat of soft gray-green evergreen leaves. Though I have been unable to flower it here (the flowers are borne in an almost head-like cluster and are reported to be pink), it is valuable for its foliage alone.

This is but a taste of the genus, a pitiful sampling of the 70 or so species that are known. Some, doubtless, are of no horticultural merit, while others may be too large for anything but the perennial border, but there remains a large residue of which we may have only a description in a book or a few scraps in the herbarium to tantalize us. Unfortunately most of them are now hidden behind curtains of iron or bamboo. We can but hope that it will not be too long before we can again journey to Yunnan or Transcaucasia to seek out the ones that we do know, and the many that we have yet to see.

LAST CALL FOR THE SEED EXCHANGE!

Immediately on receipt of this BULLETIN, members should send their seeds for exchange to Mr. Harkness, or if delay is necessary, the seeds (or a list of them) should reach him not later than November 15 if they are to be included in the Seed Exchange list which will be distributed with the January BULLETIN. Last year a number of seeds were received too late for inclusion in the list, some of them very good kinds.

It should be remembered also that the seeds are distributed on a first come basis: contributors have first choice, but their wants are cared for in the same order as the seeds were received; non-contributors are obliged to wait until the requests of contributors have been cared for. So, if you want seeds, it will pay you to send in even two or three packets to the Exchange; but the more kinds you send, the better for everyone. There will be, as usual, many kinds available that are difficult to obtain elsewhere, and at least one choice species that has never before appeared in any seed list.

The seeds should be sent to the Director of the Seed Exchange, Mr. Bernard Harkness, 5 Castle Park, Rochester 20, N. Y., before November 15.

FLUORESCENT LIGHTS FOR SEEDLINGS

FERN IRVING, *Omaha, Nebraska*

MY FIRST ATTEMPT at raising seedlings under fluorescent lights came as a last resort. I had tried the usual outdoor beds, cold frames, etc., but always lost my seedlings because I was away from home so much of the time when the seedlings were at a stage where they needed careful attention. After two years of losing everything that germinated, I decided that African violets could move over on the benches to make room for some rock garden plants.

Our home is heated by Electrigras panels, so we have no heat in the basement. The temperature changes only with the seasons, being around seventy in the summer and fifty in the winter. If or when we have an outdoor temperature of twenty below zero, the basement can be maintained at fifty degrees by burning a single one hundred watt light bulb. The fifty degree temperature may not sound warm enough for germination of seeds, but I have had astounding success—that is, astounding for me. My seeds have been planted in wood flats, in a medium of one part horticultural peat, one part sand, and one part sifted loam. I keep the flats covered with aluminum foil until germination begins, so they don't need additional water after the first dampening. The flats are kept under the benches until the seedlings show, when the foil is removed, and the flats are placed on the bench under the fluorescent lights. I have two fixtures each carrying a pair of forty-eight inch, forty watt bulbs. These provide a lighted space six by nine feet. The lights are held approximately fifteen inches above the flats, but I understand that the exact distance depends on the altitude, and here we are 1100 feet above sea level.

I have kept the lights turned on constantly for the first few weeks after germination, and I have experimented with growth under fewer hours of light. I have not found that seedlings of rock garden plants need twenty-four hours of light, but that they seem to do very well with fourteen or sixteen hours a day. One of our nationally known gardeners contends that seedlings will get leggy with less than twenty-four hours of light, but this has not been my experience.

Last fall I transplanted hybrid primulas to the garden directly from the flat in which the seed was sown. I had three hundred plants from seed sown in January and grown in the basement all summer. None were unnatural in leaf size or weak in growth, and they were fed only three times with Rapid-Gro.

Primula frondosa made such attractive rosettes, with much more farina than they ever had in my garden, that I decided not to set them in the garden last fall. I transplanted them (in November) to two inch plant bands, placed the bands in a flat, and left the flat under the lights. In March the plants came into bloom.

The successes in the past two years include anemone, aquilegia, arabis, corydalis, campanula, dianthus, erysimum, *Iris innominata*, lychnis, liliium—many *L. martagon* bulblets are now in their second growth season, having been planted in bands when they were dormant, dormancy induced by withholding water—melandrium, helleborus, silene, and primulas: *PP. alpicola*, *frondosa*, *marginata*, *pulverulenta*, *bulleyana*, *japonica* hybrids, *pubescens* hybrids, *auricula*.

In addition to raising seedlings, I have brought in cuttings in late fall and have grown them over winter, and have also grown some plants that I brought from California too late in the season to plant out of doors. *Campanula* 'Fanny Senior' is full of bloom now (March 17), the first bloom on a young plant bought in San Francisco in November.

As a final thought, I might add that after seedlings have passed the very young stage, they need watering only about once a week. The low temperature and lack of rapid circulation of air cut evaporation to a minimum. The older, large house plants that live on the fringes of light are watered every ten days or two weeks. Occasionally during the hottest part of the summer I run an electric fan to keep the air fresh, but the rest of the time it is not necessary.

In addition to having a high percentage of survival among the seedlings by raising them in this way, the dyed-in-the-wool gardener will get more pleasure from indoor gardening when he knows that the plants will enrich the rock garden, come spring. I actually count the seedlings as they come through the soil, and keep count to see how many survive.

This year I am trying *Penstemon pinifolius* for the third time; up to now, penstemons have not germinated well indoors. I gave the penstemon seed the refrigerator treatment that I always give primulas, this year, and from seed sown on March 3, 42 seedlings of *P. pinifolius* were up by March 10. To date, five have disappeared.

Most of my seed has come from the Alpine Garden Society or the Scottish Rock Garden Club; some kinds have not been true to name, some seeds (especially of lilies) have not been viable, but on the whole I am very grateful for the opportunity to raise plants which are not otherwise readily available to me.

SOME PLANTS IN MY GARDEN

BETTY JANE HAYWARD, Scarborough, Maine

EACH SUCCEEDING YEAR in the rock garden, some new plant brings pleasure, or perhaps an older one reaches maturity, and shows its attractiveness for the first time. The following are some I have admired during the past summer.

Macrotomia echioides (*Arnebia echioides*) is a most interesting and attractive species in the Borage family. The long, rough-margined leaves resemble those of some of the pulmonarias. The flower stems spring up from the crown to a height of about ten inches. The flowers are in loose clusters, the individual florets nearly one inch in diameter. The color is primrose yellow. The distinguishing feature is the almost black spot that appears at the base of each petal on opening. These soon fade away, and leave the blossoms an unsullied, pure yellow. This strange behavior gave rise to the name 'Prophet Flower' in the Orient, its native habitat, connecting it in legend with the return of Mohammed. In the garden it is happy in a fairly sunny spot, with drainage. It seems reliably hardy. It is increased by offshoots from the crown or by seeds, which are not freely set, however.

Penstemon pinifolius. It is natural to love those plants that do well for us. Penstemons in general have been neither a joy nor an inspiration in my garden. It is hard to remember any that I have cherished until I met the fine little *P. pinifolius*. Either the flowers have been disappointingly dingy, or the most promising, choice variety has died just as it reached maturity. *P. pinifolius* has all the good qualities of a first rate rock plant. It is a true perennial of refined appearance. The little eight-inch twigs are thickly set with dark green, heather-like leaves. The dainty, tubular flowers come in the upper leaf-axils. The color is charming, a strange light red, with a pinkish cast. The little plant is covered with blossoms for many weeks in summer. It enjoys a high and dry place, and prefers a lean soil to grow in. The plants can be divided quite easily. Seed is also furnished after the flowers fade and dry. These plants were grown from seed, which came from a reliable source. Other species have been sent out that are not the true plant.

Erysimum capitatum is the most attractive of any of the wall-flowers, it seems to me. In most the color is crude, and the habit coarse. *E. linifolium*, with its lovely cool lilac blossoms, is not hardy in our cold northern climate. Some care and consideration is needed to keep *E. capitatum* in winter. It must have a sheltered spot with a rock behind to shut off the cold wind. It is fully worthy of fussing over because of its neat habit and lovely creamy flowers. They are extremely large, quite astonishingly so. Borne in a large cluster just above the dark leaves, they create a truly beautiful effect. *E. capitatum* bears seed in profusion like the others, and should be raised from seed often. It is doubtful if it is anything more than a biennial.

Linum salsoloides nanum is one of the true alpine flaxes. It spreads out flat, with twiggy stems, furnished with gray leaves, to a diameter of twelve inches in an old specimen. It is slow in growth, but when it becomes mature, the fine pearly blossoms are quite freely scattered over the gray mat. *L. salsoloides nanum* has the tap-rooted habit of its family and resents disturbance. It is best established in early life in a well-drained spot, with some sun, and allowed to grow on there. Seed is scarce, but is still the best method of propagation. Cuttings can be tried in summer.

Iberis saxatilis var. *pygmaea* is the tiniest of all the candytufts. The woody stems press close to the ground, the small bronze-green leaves are toward the tips of the stems, the little cluster of flowers come at the end. They are typical, but relatively small. The tight buds are pinkish, filling the center, while the outer, open blossoms are white. This 'so little' candytuft is sure to attract attention. It is best displayed on a low wall-top, or on a little elevated place. If its dark leaves are backed by gray stonechips the effect is even better. As in all cruciferae, seeds are freely set, and even one small cluster will yield a few good seeds. Cuttings root in summer, also.

Anemone pusatila var. *budapest* is becoming known as a most attractive form of this very variable plant. In my garden it blossoms two weeks before the others. The color is a charming pale bluish lavender. The flowers face up, and the center is large and thickly filled with yellow anthers. The plant was placed when quite young in a warm spot quite low on a south-eastern slope, where it gets the early sun. All of these early blossoming sorts will give of their best in a warm location, furnishing the flowers much earlier. If the spring is cold, these early anemones are reluctant to set seeds. If even one plant comes from seed of this fine variety, it is a reward.

Tulipa tarda. Much can be written about the choice, small bulbs for the rock garden. *T. tarda* is one I like very much. Coming from Turkestan, it enjoys a place that is warm in spring, and where it can dry its bulbs in summer. It is planted on the sunny side of the garden, on a small plateau, where, later, neighbors spread over. In spring, the buds spring up, bronzed on the outer surface. On a sunny morning the pale yellow flowers with white edges open wide on little stems above the narrow, grooved leaves that spread flat to the ground. In characteristic tulip fashion it disappears soon after flowering. It multiplies moderately, but I like to put in a few new bulbs occasionally, to be certain of a repeat performance.

Armeria corsica is unique among the sea pinks, because of its brick-red blossoms. Its growth and habit is quite like that of *A. maritima*, though perhaps the foliage is a little finer and more grass-like. It increases rather fast, and as the plant grows larger, more of the attractive flowers are produced. All these types are quite easily increased by division. When the plant is large, it can

be dug, and if held firmly in the hands, the tufts can be pulled apart with a strong downward motion, to strip some of the root bark, with a few roots attached. Every piece will make a good plant that season if this is done early. Not many seeds are found in the chaffy seed heads.

Geranium cinereum var. *album*. *Geranium cinereum* and the lovely *G. argenteum* were among the choice plants I treasured long ago. They were finally lost, and for a number of years the garden was without them. Recently, I have been fortunate in starting them again from seed. To my delight, *G. cinereum* var. *album* appeared with the other seedlings. The snowy flowers above the silver leaves are lovely, and they open one after another all through the summer and into the autumn. The best plant is situated high in the garden, beneath a small evergreen. These small alpine geraniums seem to resent disturbance, often dying under your despairing eyes. I hope it will never be necessary to move this fine specimen.

Thalictrum kiusianum, the small and delicate little thalictrum from Japan, is quite well known and generally admired. The plant is attractive with its pretty, lobed gray foliage. The flowers are in dainty sprays on short, wiry stems. The effect is misty, mauve, modest, but appealing, nevertheless. It is very easy to increase, as it runs about just beneath the surface, and the small runners with thickened ends can be detached to grow on as individual plants.

Saponaria ocymoides var. *rubra compacta*. It is hard to believe that this restrained, dwarf plant is but a variety of the saponaria that spreads about in such a weedlike fashion. In every way it is distinctive. At maturity, it is still small and closely pressed to the ground. The stems are dark, almost red. The leaves are relatively smaller and the fine flowers are deep carmine and cover the plant almost completely. In common with others who have grown it, with me too, it has the greatest proclivity for dying off for no reason whatever. Perhaps the scree is the place for it. It is a beautiful plant, and worthy of every care and consideration.

LATE BLOOM IN THE ROCK GARDEN

DORETTA KLABER, *Quakertown, Pennsylvania*

ONE OF THE BIG PROBLEMS in the rock garden is adequate bloom after the end of May. As a matter of fact, there are a great many plants that bloom in June, there are some beauties for July, and by August many earlier plants, such as pinks and dwarf coreopsis, if they were cut back after blooming, will provide a second show, though less spectacular than their first. I admit that July in my garden is a horror: a little scattered bloom, but it is always hot and dry and I let the weeds take over, partly as protection to the plants, and partly to keep from expiring myself. By August we all begin to come to life.

Last year was a particularly hot and dry summer, but below I listed the plants which bloomed here after July 1:

Penstemons: mostly 'Flathead Lake' (now *johnsonae*) 10-12 inches, coral or pink, showy; not too large for the smallest rock garden; long season.

Geraniums: *G. sanguineum* 'Walney,' pink to reds, long blooming mats; *G. s. lancastricense*, more prostrate, luscious pinks; *G. grandiflorum alpinum*, 8-10 inches, large blue flowers.

Oenothera fremonti: large silvery mats, very large evening primroses, long season.

Iris chrysographes, the black form especially beautiful with long black pointed buds opening to dark purple velvet flowers with gold crest; *I. forrestii*,

lovely pale yellow; *I. sp.* Kingdon Ward, odd purple. These are all 15-18 in. high, but not inappropriate in a moist spot.

Campanula rotundifolia blooms until frost; *C. elatines*, one of the choice small ones; *C. raddeana*, rather weedy though with large flowers; *C. cochlearifolia*, a creeper for walls, steps and odd corners; all are good and there are others too, I'm sure.

The herbs, rue, lavender (dwarf and tall), and sage perform the function of shrubs in the garden and all are decorative. Lavender wants a warm sunny spot and all benefit by heavy shearing after bloom.

Alyssum murale (argenteum), a 10-12 in. mound covered with small yellow flowers for a long time.

Veronica incana, silver and purple, 8 in.; *V. spicata nana*, a mat with 3 in. purple spikes, and some pink kind.

Linum flavum, the yellow flax, about 8 in. high, quite different from the airy blue flax, but lovely too.

Potentilla fruticosa purdomi, and *P. f.* 'Gold Drop', shrubs to 2 ft., with continuous bloom in light and darker yellow.

Tunica saxifraga single and double, the first airy, the second more showy, very long season.

Miniature roses, if you admit them, long blooming.

Delphinium tatsienense and *D. pylzowii*, deep blue, from 4 to 8 in.; will usually live several seasons. *D. belladonna* and *D. bellamosum* are not too large for a large rock garden, as the gritty soil keeps them to about 18 in., and their blues are most welcome.

Heucheras are scorned by many for rock gardens, but I find the delicate red flowers of 'Pluie de Feu' invaluable, and all of them welcome for their long season of bloom.

Johnny-jump-ups we have always with us and we would not be without them. Some viola hybrids are admissible, and *V. arenaria rosea* keeps on blooming.

Sedum acre, if you can control it (an impossibility—Ed.), *S. dasyphyllum*, always choice, *S. sieboldii* for very late bloom, and *S. capablanca* near it but earlier to bloom.

Silene schafta for long continuous bloom, with flowers sometimes of too deep a pink, but being improved in tone.

Linaria alpina, one of the choice alpines, purple with orange lip; not very permanent unless it self-sows, but long-blooming and far superior to its hardier hybrids.

Astilbes, the charming dwarf *A. sinensis* and *simplicifolia*, while in a shady damp spot the big ones have value.

Bellium minutum, small enough for a dish garden, with its tiny leaves and 1-2 in. high showy white daisies with pink reverse.

Scabiosa alpina and *S. scabra*, blue, and *S. lucida*, pink, about 6 in. high, foliage "unalpiny," but with a long season of welcome bloom.

Brooms and heather; the latter want a soil on the peaty side and here seem to prefer light shade. Of course one can have all season bloom with heathers, and where happy, nothing could be nicer.

Aster kumleinii, with drooping stems of little pink or blue daisies, and a long season.

Asclepias tuberosa, the butterfly weed, takes the place of a shrub, and its brilliant orange flowers make a high spot, especially near a bush of lavender; gives a second bloom if cut back.

Callirhoe involucrata, almost a weed here, liking the gritty soil; streamers of crimson cups, very striking and beautiful in the right place, as on top of a big wall, and *not* near the butterfly weed!

Thymus serpyllum and varieties, especially *coccineus*, for paths or places where they won't take the garden.

Gentians are the best of all plants for late bloom. Hardy and not difficult are *G. septemfida* and its close relatives, *G. lagodechiana*, *G. freyniana*, and *G. hascombensis*, with mats and mounds of glossy foliage and deep blue trumpets. *G. gracilipes*, *G. procumbens*, and others in that group make a central rosette of rather large leaves surrounded by flowering stems with smaller blue trumpets than the above. Anyone starting with gentians will want to try the challenging Himalayan species such as *G. farreri*, *hexaphylla*, *sino-ornata*. They want peaty soil much moisture, perfect drainage, shade from the hottest sun. Here the soil is on the limy side, and although I get an occasional bloom from the countless seedlings I raise, they never thrive with the abandon that the same seedlings produce in a garden where they are happy. If you can give them what they need, you will never again complain that there is not good late bloom for the rock garden.

PHLOX X MARIETTA, A NEW CULTIVAR

EDGAR T. WHERRY, *Philadelphia, Pennsylvania*

SOME YEARS AGO MRS. J. NORMAN HENRY collected in Georgia various color forms of *Phlox divaricata* and *pilosa*, and grew them together in her garden at Gladwyne. From time to time hybrids appeared, and she gave some of these to nurseries to propagate and place in the trade. This did not get accomplished; but fortunately before the plants died away, one attracted the attention of an unrecorded horticulturist, who purchased it and divided it with friends. One of these gave a plant to the Golden Hours Gardens, a "cash-and-carry" nursery now located on Boot Road east of Grove, north of West Chester, Pennsylvania. The proprietor of this nursery, Mrs. Mary E. E. Thorp, turned over a division to the Hildemere Gardens of Wawa, Pa., and they listed it in their catalog as "Phlox Marietta." Their stock was nearly sold out in 1955, but the Golden Hours Gardens still has a few on hand. Its horticultural merit is such that it deserves a formal description.

Phlox X Marietta

(*P. divaricata laphami* X *P. pilosa ozarkana*)

Plant 20 to 30 cm. high, producing flowering branches from multiple nodes, along with sterile basal ones which may strike root at nodes: leaves oblong below, widening to ovate and cordate toward stem-tip; pubescence present on inflorescence-herbage and corolla-tube, unusual in lacking gland-tips; terminal awn of sepals only half a millimeter long; corolla 25 to 30 mm. across, the limb a solid disk owing to the petal-blades being especially broad; hue bright lavender,—in Maerz and Paul's Dictionary of Color, Plate 42-C-5, paling with age to yield a color-play; purplish eye-star moderately conspicuous.

These features correspond to this plant being a hybrid of the two subspecies above stated, although the glandless hairs represent a rare variation. It is sterile and matures no seed, but has marked hybrid vigor and is readily propagated by cuttings. Its horticultural value lies in its abundant flowers of good form and unusual coloring, coming at a time when the lavender hues of *P. divaricata* have vanished from the garden: at latitude 40° it blooms through June, then if faded flowers are trimmed off, well into July, and in favorable seasons again sparingly in September.

SEED LIST NOTES

GRACE F. BABB, *Portland, Maine*

"SECOND THE MOTION": for more notes and reports on seeds in the exchange list. Two of the kinds sent in under my name and number this year are worth knowing more about, and perhaps the original senders will see these notes and answer my questions.

One is "*Lobelia cardinalis* HYB.", which I grew from seed in the exchange of 1954, and also "*L. siphilitica* HYB". Are these hybrids between the two species named? I suspect so, since apparently I got more cardinalis-type plants from both batches of seed. This was entirely satisfactory as the blue species seeds generously all over my garden every year. The cardinal plants were gorgeous, the largest and strongest I've ever grown. Among them were several of the paler varieties, almost white, but with showy irregular splashes and veinings of rose or brilliant red on the lobes. They showed up beautifully by contrast, interplanted among the red ones. All of the plants made strong new rosettes for another year. If this is "hybrid vigor" and they continue to do well, this should be a very worthwhile strain, since the wild plants are apt to be short-lived in our gardens. One pure white *L. siphilitica* appeared, to my joy, and I hope this will also do well as I have tried to get it started for several years.

Oddly enough, I had the thrill of finding the wild *L. cardinalis rosea* on a trip in late July. We stopped for a picnic lunch beside the Smith River in New Hampshire, and the cardinals were everywhere in the rocks and sand along the river bed. By sheer luck I spotted the two pale colored plants and brought them home. Although the bloom spikes were bruised and failed to continue flowering and forming seed, both plants made new basal growth. I also remembered a tip from Mr. Will Curtis, well-known propagator of wild plants, and bent one stalk down along the ground and covered it lightly with soil. Sure enough, several young rosettes appeared at the joints of the stalk, and if they winter safely, will assure a stock of young plants. The color of these seemed a uniform pale pink without the color of the hybrids.

The other "question mark" is *Anthemis hausknechtii*, which deserves a common, or at least a pronounceable name, for it is a cute little thing. Seeds came from Stephen Hamblin and I have intended to get more information about it and its native habitat. (A hybrid. Ed.) I have an especial soft spot for little composites, and this has a nice white daisy flower, inch-wide, on four to six inch stems. The typical ferny foliage mat is only a few inches high and very fine-cut and gray. Some of the plants bloomed a second time after being cut back, and if this trait is consistent, it will add to the garden value. In their two years here, grown in poor sandy soil and full sun, they have not spread very fast nor grown very tall, but I make no guarantees for the future.

I would echo the praise given *Aster linarifolius* in the July 1955 issue, and would like to add that the picture, although a fine portrait of the individual stem and flowers, fails to show the garden effect of a good clump. It is odd how unobtrusive even a large clump will be until it is in bloom when it becomes a rounded mound of solid color, lasting for a long period. I was delighted last fall to have a fine plant of the white variety from Mr. Mitchell's nursery in Vermont. I have started seedlings several times only to lose them over winter. This white form doesn't compare for color value with the lavender ones, but is a charming addition to the list of albinos for those of us who are fond of them.

The dwarf liatris (seed sent to the exchange) has been in the garden for many years, and its original source and name have been lost. It blooms in July and August, height only two feet or less, the usual fuzzy spikes of bright purple.

NOTES FROM A BEGINNER

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

I AM SO MUCH of a beginner that I have not even got a rock garden proper as yet, but I have been experimenting for more than five years with all kinds of alpine plants and any others that will grow in similar conditions. So far my efforts have been confined to banks, walls, terraces and raised beds, the chief reason for not having a properly constructed rock garden being that we have moved several times, and none of the places where I lived had any rocks. Such few rocks as there were under the ground and nearby were shaly and would fall to pieces in short order if exposed to the elements. So from time to time I brought home lava rocks, which are very light and convenient for a woman to handle.

Our present homesite is a fine sloping hillside which will make an ideal rock garden once the fundamental structure is laid. The soil is rather poor, consisting of shale and a yellow clay with some leafmold. This gravelly mixture holds moisture a long time, but has excellent drainage. With the addition of compost or leafmold most rock plants will be very much at home.

My interest in alpine plants was aroused by an effort to find something to grow on a steep river bank. This is an impossible situation for a rock garden, but I surely learned a lot. This bank had a path at its top with a retaining wall about two feet high, making a planting space about thirty inches wide and thirty feet long between the wall and the south side of the house. This was really a hot spot and tested the endurance of every heat and drought resistant plant I read about. From this beginning came my love for rock plants and my desire to live in a place where I might have a real rock garden.

This hot terrace-like strip, overhung by wide eaves and not shaded by shrubs or trees, was so hot that if one stood in the path on a hot day, one's head would soon swim from the reflected heat. Nevertheless, I found plants which could endure this and look fresh and bloom, even if water was withheld for long periods.

Convolvulus mauritanicus came to be my pet, almost my favorite of all rock plants. Hanging over this hot wall it was always covered with dense rich leaves and a shower of lavender blue inch-wide flowers. Some plants are called ever-blooming which bloom a little bit most of the time, but not so with the Morocco morning glory. It is covered with bloom from Iris time until very late fall. I had to shear my plants occasionally as they had only about two feet in which to trail, but they grew fast and continued blooming. They had flowers open on sunny days up to about January, when they would freeze back. In frost-free climates, I could imagine them blooming all the year round. Even the hard freeze of last November did not kill any of the plants on banks. Small seedlings or newly rooted cuttings froze, and no plants have ever wintered over planted on flat ground.

A second favorite for this terrace was *Silene schafta*. This looked fresh and green no matter what the heat or how negligent the watering, and in fall it bloomed a long time, with rather small lavender pink flowers. The color is not striking, but the plant endears itself to one with its wonderful constitution. Both the plants and flowers remind me of *Dianthus deltoides*, but the color is not so rich, and the plants bloom in fall instead of spring.

For a plant for a hot dry place where the hose won't reach, I nominate *Satureja montana*. The type I had was called *pygmaea*. Surely no place could be too hot or dry for this plant. My saturejas were flooded in winter, uncultivated, grown over by weeds and tall grass, neglected in dry spells, but when I would remember them and clear away the weeds from around them, they would be as

fresh as the junipers nearby. And in the very late fall, they would sheet themselves with the palest lavender flowers. The dark green leaves look more like needles than leaves to me, so I planted them as companions to dwarf junipers and spruce, and *Penstemon davidsoni* and *crandalli*. None of these plants was ever bothered by pests.

Another cast-iron plant I found to harmonize with the preceding is the beautiful Lancaster geranium, and I now have *Geranium* 'Alpenglow' also. These plants are absolutely prostrate and have about the same size flowers as the morning glory, but of a pale pink, or in 'Alpenglow' in darker shades, mostly purplish pinks in the ones I have. I love their foliage which is ornamental even when the plant is not blooming. I have never had a geranium covered with flowers—maybe my plants are not old enough—but they bloom quite freely in spring, with scattered flowers thereafter, from time to time. I use it in many places, even on the edge of the driveway where the wheels of cars almost touch it, but it doesn't mind, although it gets somewhat dusty there. This seems to me to be a plant which grows better with rocks around it, and I always brought in rocks and buried all but the tops, so that the geranium could creep around. This is the way I like it best.

HOUSTONIA CAERULEA

ELLEN PAGE HAYDON, *Riderwood, Maryland*

FOR SOME YEARS it has been my good fortune to keep in apparent contentment a few clumps of *Houstonia caerulea* in a low, damp corner. They have been watched solicitously (though they need no pampering), for in my estimation the houstonia is not "just another rock plant" or tamed wildling. It is a symbol and reminder of days, many years ago, when, as a child, I accompanied a nature-loving uncle on long wanderings into the wilds of what is now Rock Creek Park, outside of Washington, D. C.

Every spring, with delight, I gathered the little "Quaker Ladies" or "Bluetts" as they were called. But I had a name for them all my own; "Fairies' Flowers"—for in my childish imagination, I was convinced that fairies used the tiny blue stars as garlands and wreaths for their hair. It was my hope that at some time I would surprise a fairy in the act of gathering them. So the idea came to me that it would be a sort of snare to transfer their favorite blossom to our own garden.

Immediately I set to work to create what I called the Fairy Dell, not knowing that I was, in reality, making a rock garden. Under the steps of a high old porch, screened by festoons of a cream and green leaved Japanese honeysuckle, I dug the earth and filled it with the woody loot of many trips to the Rock Creek territory. Patiently, lichened rocks, sandy and gritty leaf ivies, and wild plants were brought in, established with great care and enthusiasm, so that "Fairies' Flowers" could be made to feel at home.

Many hours were spent watching for fairies, but, unwittingly, I was cultivating a small but lovely rock garden, my first, and indeed the only one existing in a large community of gardens. In those days few wild flowers had a place in the home grounds. Needless to say, I did not see any fairies; and in time, the little rock garden disappeared from my interest. But I have ever had a great love for the houstonia.

Looking at it practically, it is a fine little rock plant, more delicate and fragile in appearance than any viola or anemone. Its height is anywhere from three to six or seven inches.

The blossoms, which appear in April and May, are four petaled; in color, a light sky blue (occasionally white or lavender), with a small yellow eye. In size, they are less than one-half inch and they are borne singly on thread-like, yet quite strong stems. Unfortunately, they have no fragrance. The narrow leaves, about one-half inch long, are chiefly basal, with a few opposite ones along the stems.

Houstonia caerulea grows in light shade, in low, moist meadows or woodlands usually (though I have found large colonies on steep dry banks), and for cultivation should have sand and leaf mold with perhaps a slight acidity; a moraine or the nearest approach to one would be good.

In many localities in open woodlands *Houstonia caerulea* may be found growing in great drifts and the earth seems as if covered with a pale blue veiling.

They are lovely planted with *Viola pedata* and its variety *bicolor*; trout-lilies (*Erythronium americanum*); marsh marigolds (*Caltha palustris*); marsh ferns (*Dryopteris thelypteris*), *Myosotis palustris*, and other moisture-loving plants.

There is another species, *H. serpyllifolia*, of a deeper color and slightly greater height, which comes from southern mountains.

With care, *Houstonia caerulea* may be successfully raised from seed; or one may be privileged to lift a few young plants after flowering, from neighboring woods.

Botanically, this plant is named for Dr. William Houston, a botanist and collector; and descriptively it is named for the blue of the sky. But with all due respect for horticultural terms, in one grower's sentimental consciousness it will always live as "Fairies' Flowers."

HELONIOPSIS BREVISCAPA

HELEN C. SCORGIE, *Harvard, Massachusetts*

THE HELONIOPSIS is a bit of a paradox in that, despite its appropriate name, in every likeness to its well-known American cousin there is a marked deviation. The technical difference between the two most obvious to the gardener is that, whereas the swamp-pink, *Helonias bullata*, has tuberous roots, its Korean cousin is rhizomatous.

The impression that the swamp-pink always gives is of perfect symmetry. But this is lacking in the heloniopsis and it is largely in this respect that the two differ in the eyes of the gardener. The leaves of the heloniopsis are somewhat scantier and the rosette does not give that impression of perfection, either in placement of the leaves or in their equal size. Moreover, the rosettes are scattered irregularly along the rhizomes.

Among its many attractive features, none is more pleasing than its very early flowering, in which, again, it differs from its relative with its late spring blooming. The heloniopsis usually shows its rosy buds before the snow has gone and the flowers open up in an almost stemless cluster.

Gradually, the stem pushes up but it never reaches the height of that of the swamp-pink. The deeper, brighter color is more attractive. This is rhodamine purple in the R.H.S. Colour Chart. Instead of the dense raceme of the American, the inflorescence is loose and rather irregular, with larger flowers. These features give the two species that dissimilar similarity.

The cousins, do, however, thrive in the same acid, mucky soil, requiring constant moisture. It is happy here in full sun and asks no special attention. It is absolutely hardy and very free in its bloom.

CHILEAN NOTES — II

CRW

After a pause for lunch, we went up the next quebrada, which was very narrow, between almost perpendicular walls, and gay with *Argylia radiata*. As the argylias were our companions throughout our stay, and ranged from seashore to quite high altitudes, it may be well to pause and describe them in detail. They are the Andean counterpart of *Incarvillea* of eastern Asia, and quite similar in appearance, of flowers at least; these are widely inflated trumpets looking like a somewhat flattened *I. grandiflora*, and are often about two inches across. The species we encountered on this day had flowers ranging from yellow to deepest orange, over mats of erodium-like foliage. So far as I know, all our efforts to introduce this genus failed, for seed was never ripe; if ever I return to this region, collecting seeds of the argylias will have top priority. Here again we met *Alstroemeria violacea* in full bloom, at times wine red, a few more oxalis, a shrubby legume about four inches high, with bright yellow flowers, of the Caesalpinoideae, and tall columnar cacti, which take the place of trees on these coastal hills, and often grow in dense forests.

Here also we met the second of the strange, apparently annual, violas of the coast and lower mountains of the north. They form rosettes of tightly overlapping spatulate leaves, the whole plant only an inch or two across, with typical violet flowers sticking out here and there through the leaves, white to deep violet or yellow. We searched long for a few seeds, which refused to germinate, for me at least. These are *not* the rosulate violas whose incredible pictures appear in Clay, but which are even more marvellous when seen in herbarium specimens; these annuals are, however, strange and delightful little treasures, which I should give much to have in my garden.

On other trips, among the plants we met were an amaryllid with two to four flowers to the stem, flat, white with a three-parted yellow corona, so that it looked like *Narcissus poeticus*; a shrubby calceolaria with long racemes of pure yellow flowers half an inch across, and near it a herbaceous one with rather dark and glossy basal rosettes, above which foot-high stems bore inch-long flowers dotted red on the lower lip; a pink sisyrinchium with inch-wide flowers on stems of eight inches; a fine white borage two to four inches high with yellow-eyed white flowers; *Oxalis gigantea*, although I did not recognize it till weeks later when we found it in bloom; a mesembryanthemum (?) with inch-wide dead white flowers like a sea-anemone, and thick red leaves with crystals on the under side; an orange-flowered plant that looked much like a lithospermum. *Cruckshanksia* we met too, but I shall delay a description of it till we meet it in even more gorgeous form at higher altitudes; it is perhaps the most beautiful dwarf that I have ever seen. All of the plants we met here are presumably tender, for they grow near sea-level, and barely south of Capricorn. But many are annual, most are dwarf, and should prosper in the cool house or alpine house, if ever the opportunity arrives to introduce them to cultivation.

By this time Sr. Wagenknecht had arrived, and after finishing the drying of our specimens, we went, again by way of Sta. Catalina, to more southerly regions where still different plants awaited us, but never did we find at low altitudes as rich a collecting region as that around Taltal.

As we travelled southward, many of the places at which we stopped offered little of interest, florally or otherwise. Copiapó, virtually destroyed by earthquake the next year, is to be remembered chiefly for its hotelkeeper, who treated us with true western hospitality in spite of language difficulties; and for its banks, which refused to honor our letters of credit or to cash our travellers'

checks; Caldera, for the rumor which spread around the once proud, but then nearly defunct town, that we were spies mapping the coast; the Quebrada del Leon for the long trip to it across barren sand dunes, only to find that the rare nicotiana which we sought was just beginning to flower, and that there was no hope of obtaining the seeds which Dr. Goodspeed so greatly desired; the barren headland known as the Morro of Copiapó, for an alstroemeria which we never saw elsewhere, only two or three inches high, with inch-wide yellow flowers, flushed orange on the reverse. We proposed making a pack trip southward, only to be informed that neither beasts for the trip, nor water, could be had, and that our project was impossible. It was not until years later, on rereading "The Voyage of the Beagle," that I realised that Darwin had travelled all the way from Valparaiso to Copiapó on horseback; were men mightier in those days, or were conditions different then?

Neither need I dwell on our more or less fruitless expeditions from Vallenar into a region that gave evidence, in a rainy year, of being rich in plants, but in the very dry season when we visited it, there was little to be collected. But we shall pause at the lovely little Isla de Guacolda, off the coast from Huasco: perhaps fifteen acres of sand, with a few fine outcrops of rock. Almost as soon as we landed, after clambering over jagged rocks ten feet high adorned with barnacles and other horrors, we came upon the loveliest of all mallows, a foot high and more across, with myriads of inch-wide saucers of purest deep lavender. *Cruckshanksia montiana* grew in the sands. I have mentioned the genus before, and had thought to delay introducing my readers to this loveliest of all races of plants for the rock garden until we should meet it at high elevations, but find that I cannot delay longer. The plate of *C. glacialis* in "The Present Day Rock Garden" leaves one completely unprepared for the beauty we encountered: imagine a compact aubrieta with flowers almost crystalline in texture, of purest white, glittering gold, or soft lavender, from which rise inch-long tubes of gold, and you may have a faint idea of the exquisite loveliness we saw. Actually the tubes are the flowers, the "aubrieta flowers" colored bracts. The species we met on Guacolda formed foot-wide bushlets three or four inches high completely hidden under the mass of bright yellow bracts above which rose the deeper yellow tubes with tiny orange center. The lovely little yellow composite of Taltal, probably a tylloma, was there, but still not in ripe seed. Another dwarf alstroemeria, with dull dirty lilac flowers, puzzles me; we were constantly finding alstroemerias, all different in color, at least, from those encountered elsewhere. Are they different species, or is the color dependent on locality? Here too grew the loveliest nolana yet seen: branching from a basal rosette of sorts, with wide grey-green leaves which had reddish central ribs and margins, it had morning glories fully three inches across with ten rounded lobes, blue, with an inch of white below, and yellow throat. Since writing the first installment of these notes, I have obtained seed of, and flowered, one or two nolas, but they are inferior to almost any that I saw on the coasts of Peru and Chile, and should not be used as a basis for evaluation of my ecstatic praise! On Guacolda there were also a "Pato de Guanoco" with clusters of rosettes of thick red-spotted leaves on woody trunks, and flowers nearly two inches across; a really lovely light yellow hypochaeris; and just going dormant, *Habranthus añañuca*, a little amaryllid of whose currently correct name I am uncertain. We all fell to and dug a quantity of the horribly soft "papas" of this, which I doubt ever reached Berkeley in growable condition.

Our most interesting activities were in the province of Coquimbo, and I shall dwell on them in detail. All afternoon, as we approached there, the train wound through arid country looking much like Arizona, dry hillsides covered with cacti

and desert shrubs. Occasionally we could catch glimpses of snow-streaked peaks. Gradually we came into the rougher country of the Coastal Cordillera, and went through a canyon where a shrubby yellow calceolaria and a pinkish alstroemeria were in bloom. At the station of Tres Cruces Rodolfo picked up a single plant of a tiny annual nicotiana, on which John found some good seed. The railroad from here climbed in a great series of loops, the aridity decreased, the shrubby calceolaria became profuse, a dirty-pink argemone appeared, and we glimpsed a plant of a good white flowered tobacco.

At nine that night we reached La Serena, a lovely town of churches, just back from the sea. To it I should like to retire, were it not for the superabundance of fleas, which had no interest in John, but pursued me passionately and relentlessly.

As there had been no opportunity to bathe properly during the several weeks we had been in Chile, we had wired ahead to reserve a room with bath at the Gran Hotel, which, after the accommodations at the towns we had just visited, seemed indeed palatial. However, on arrival we learned that *the* private bath would not be free until the following day, so that we had to content ourselves with a room with running warm water, itself a luxury!

At eight-thirty the next morning we took the commuters' train to the seaport of Coquimbo, thirteen kilometers away, to see whether any of our long-awaited mail would have arrived. The postoffice was closed until the mail brought by the train on which we had arrived could be distributed, but posted beside the window was a list of letters received, on which both John's name and mine appeared, and we waited impatiently for the first news from home in many weeks. Back in La Serena, after lunch Rodolfo and I visited the prefect of Coquimbo, who gave me a card ordering the Carabineros of the province to render us all possible aid. But Rodolfo was so capable in making arrangements for us, and the Road Commission so obliging about furnishing transportation, that the card was never used. Almost invariably we found the Chileans courteous and helpful, and absolutely honest. Although it was necessary to leave our belongings in unlocked hotel rooms (there were no keys) while we were away, and they must have offered much temptation, we did not lose a single item.

Later in the afternoon we visited El Seminario, a monastery school a few blocks up the hill on which is the better residential section of the town. The building is a great rectangle with a large central court. Doubtless there were students around, but we saw none. We were shown into the reception room, hung with portraits; then the rector took us to the science room, well furnished with quite considerable collections of insects, shells, minerals and animals, and a considerable array of scientific equipment, including a projector. Here we inspected the herbarium, neatly tied up in foot-long books, and containing many garden plants, but also a number of species of much interest to us, from the Alta Cordillera. A young priest from Philadelphia joined us there, and later went to the refectory with us, where we were served yellow wine and German cookies. The very pleasant two hours we spent in the seminary brought vividly to mind Farrer's remarks regarding Catholic and Protestant missionaries on the borders of Tibet: our infrequent encounters with either priests or missionaries in Peru and Chile left me (a Protestant) with the impression that Farrer was all too correct, and that the former are far the better informed, the more congenial, and the more capable of dealing with the natives with whom they are in contact.

At seven the next morning, too early for the Chilean breakfast of a roll and coffee at the hotel, Rodolfo took us to a small restaurant in a stall of the large and busy marketplace (the only one I ever saw in Chile, though they were common farther north), and it was here, I believe, that he added to our vocabu-

lary, so that afterwards, by asking for huevos al plato, we were able to obtain fried eggs. He also introduced us to "quacker"—oatmeal, and later my mother was delighted with the Chilean custom of cooking it in milk; however, when she extended her new recipe to include Cream of Wheat, the result was an inferior grade of library paste.

At eight we headed north by car, along the Camino Longitudinal, which started to climb a few kilometers from town, but for a considerable distance wandered along the edge of hills near the shore, through regions grazed bare except for a few shrubs, chief of which was a very showy caesalpinia, covered with inch-wide orange-yellow blooms. After a while the ground grew rougher and more plants appeared, but nothing exciting, while mists poured in from the sea below us. About 45 kilometers out, we arrived at Quebrada Honda, which had been described as a garden, but looked very dry, although *Centaurea chilena*, the shrubby calceolaria, and a few nolas appeared, while in the very bottom of the ravine were a lovely white-flowered shrub and scarlet *Hippeastrum bicolor*. As we started up the other side, I noticed a pinkish composite and called a halt. It looked like barren country, except for shrubs, but when we looked around many plants appeared, notably a foot-high shrubby polygala with blue and yellow flowers, and *Alstroemeria violacea*. We gathered a good amount of seed of the hippeastrum, and found several other monocots, including a yellow sisyinchium, but none with ripe seed. *Oxalis gigantea* was everywhere, more slender, more profuse, but smaller-flowered than farther north. We had seen it first at Taltal, out of flower, and had no suspicion of what it might be, for it is the strangest of its genus, a shrub with inch-thick woody stems several feet high, covered with a film of minute trefoil leaves (when I first saw it, I thought the foliage was that of a fine vine climbing over lifeless branches!), and inch-wide yellow flowers dotted here and there. There was also a shrubby fuchsia (? *F. rosea*) with disappointingly small purplish flowers. Although John mourned that there was much more to collect, we had gleaned all but the most minute plants, for which he had a passion, and felt obliged to resume our journey. We continued climbing switchbacks and horseshoe curves, through ever deepening mist, until we came out on a level and practically barren valley. A few miles farther, the mist vanished, although filling the valleys between the shoreward hills, while a great sea of fog lay far ahead, beneath quite lofty peaks. To the northwest we could see our goal, El Tofu Mine, far up on a level-topped hill, with fogs underneath. At 65 kilometers, we turned to the left from the main road, and before long were scaling a mountain road, quite good, but with precipices on our right; we met cars frequently, and were plunged in fog most of the time, until at last we came out on top, where the mine village was laid out in rows of neat cabins. As the American manager of the mine had seemed none too cordial when Rodolfo had phoned him the previous day (we had hoped for an invitation to make the mine our headquarters), we decided not to pay him our respects, and turned back, stopping several times on the descent for various "dreary weeds." At the bottom, John spied another pink alstroemeria, and near it I finally got a fair supply of seed of the lovely tylloma, here quite parched and bedraggled. Later we found a herbaceous calceolaria, apparently perennial, a rosette of basal leaves with inch-long flowers of dull pink to crimson on foot-high stems: at least so says my diary, while the data on the herbarium specimens record the flowers as purplish white with deep red spots. This species had remained unidentified when the herbarium material was distributed; Dr. Pennell told me that he knew of no species of this color, nor could I find it in the pages of Das Pflanzenreich; other than (presumably) *C. arachnoidea* with deep purple flowers, which we met several times later, this was the only species whose flowers were not yellow.

We also met our first conanthera, but only a few plants; it had half-inch bells of blue sepals and white petals with two purple dots. A curiosity was an aristolochia looking like a muskmelon vine, but with sizeable "pipes."

The next morning we went to a spot only a few miles from town, where Rodolfo recalled seeing, a couple of months before, the white *Tecophilea violae-flora* in bloom. Sheep had grazed off everything, so that after a long search for a single trace of the plant, we resorted to making "soundings," and eventually Rodolfo found a bulb in a bank of sandy soil near the road. In the course of a couple of hours, we obtained a few fairsized bulbs and a quantity of tiny ones, while John found a few dullish plants for the press.

At five-thirty, we took the train for Vicuña, Rodolfo's home town, to which he had ben impatient to return for many days. It lies some two hours' travel inland, at the base of the cordillera. The way to it led through a fertile valley surrounded by rather high and rugged hills. A purple-flowered solanum made great mounds, while California poppy and nasturtiums grew wild along the tracks. Just before dusk we reached the town, and were met at the station by Rodolfo's young and attractive dark-haired wife and one of his little girls. Of course he stayed at home, while we took a room at the Casa Residencial, which was delightfully clean. The dinner was different from the usual Chilean one, for while we had the usual soup, it was followed by a stew of meat and large beans, rice and roast beef, an omelet with greens inside, and instead of the inevitable three peach-halves stewed, a small spoonful of custard for dessert.

The next day, in intervals between changing blotters on our drying specimens, we made two short trips. The first one was back along the road to La Serena, at the base of rocky hills, until we were stopped by road work. We were too late to find many plants, for almost everything had dried up, but seeds were obtained of another rosetted viola with yellow flowers. The second was even more disappointing, for the quebrada was dry and overpastured, and even on the rock outcrops and cliffs there was little other than a very thorny shrub.

Vicuña has the aspect of a rural village, hot and dusty at this time of year, with tree-lined streets, gardens enclosed in high abode walls, a few small shops, and a square with a fountain in its center. Behind the town rise jagged mountains, the nearest Cerro Negro, over 10,000 feet high, with patches of snow at the top, but looking very dry. Rodolfo told us that there are springs near the top, and grass and flowers there in February, which seems incredibly late in the season for bloom at so low an altitude. To the east is a peak of nearly 14,000 ft., more pointed and seemingly even more barren.

The next morning we were away by 6:30, driving toward Rivadavia, where the railroad ends. We stopped just short of the town where, on a cactus-covered slope, *Tropaeolum azureum* grows, but probably because of the drought, not a trace of the plants remained. We had breakfast at Rivadavia, where Rodolfo made arrangements for the next day, our first trip into the high cordillera. Then we drove on to Paihuana, but stopped on the way at a steep rock slide to examine an alstroemeria of which Rodolfo had sent roots to Berkeley as *A. violacea*. A few plants were still in bloom, and revealed a species entirely new to John and me: an umbel of a dozen or more flowers about an inch across, cool lavender except for the two upper tepals, which were gold with lavender tips. There was also a yellow oxalis, *O. illapelina*, with flowers an inch across, on stems of two to four inches; its leaves had already withered. A little farther on we met the alstroemeria again, and this time I managed to find a half-dozen ripe seeds. Just as we were about to go on, Rodolfo discovered the tropaeolum, completely withered, but with small divided leaves and dessicated flowers a half-inch across, deep blue now, although I believe they are violet when fresh. I was somewhat

disappointed, for I had expected a much larger and more showy bloom. Its tubers were from four to six inches beneath the surface of the scree, and digging was almost impossible, but Rodolfo eventually obtained a dozen and a half tubers, while I found perhaps a dozen seeds. A year or two later Rodolfo sent me a few bulbs, which were hardy enough to tolerate freezing in the unheated alpine house, but could not adapt themselves to the changed season: they would not put up any growth until late November, long after the time when they would have gone dormant in Chile, and never succeeded in blooming here. When the war came, I sent them to E. J. Greig, but never learned whether he had any success with them.

The church at Paihuana was surrounded by flowering trees, a lofty one with great racemes of red pea-buds two inches long, the familiar blue-purple jacaranda, and a yellow-flowered bignoniaceous tree, rather dwarf. Beyond the town the road wound along a stream, amid trees and houses, then at the base of arid and clean-grazed sandy peaks. Nothing at all was there, so we turned back, and I was amazed at the height to which we had climbed, although the boiling of the car's radiator should have warned me. Next, we went south for some miles, stopping where a stream tumbled down a steep rocky quebrada from a few snow-patches far above. John stayed near the car to collect, while Rodolfo and I went up the quebrada a ways, over great piles of boulders inhabited by a new oxalis with dense racemes of quarter-inch yellow flowers, quite unattractive. There was nothing more except *Centaurea chilensis*, here with pale lavender rays, and a few shrubs. As we were pressing the plants, Rodolfo noticed a white-flowered nicotiana only a few feet from the car, so the trip was not a total loss. We stopped again at Paihuana to talk with a Dane who spoke perfect English, hoping to obtain some information regarding mysterious *Nicotiana coquimbensis*, but in vain. We did learn, however, that the town still held wrathful memories of an Englishman (could it have been Clarence Elliott?) who a few years before had collected vast quantities of *Leucocoryne ixioides*. Then we returned to Vicuña, to rush through the task of changing blotters on the drying specimens, gather together sweaters, camera, plant press and a supply of food, and catch the 7:30 train for Rivadavia, where we were to spend the night and make an early start for the high mountains.

(Dr. Goodspeed has suggested that the dates of collection at various localities be given, for the benefit of collectors who may wish to visit this region. We were at Taltal from October 11 to October 17, 1938; visited La Quebrada del Leon on October 21, and El Morro de Copiapó the following day; Isla de Guacolda on October 26; drove to El Tofo on November 1; and collected around Vicuña and Paihuana on November 3 and 4. The timing was perfect for Taltal, although when John returned two months later for seed, he reported that conditions were still much the same, and that plants were still in bloom. We were too early for La Guebrado del Leon, perhaps a bit late for Guacolda, and apparently much too late for the northern part of Coquimbo province. However, in collecting over an extended region, it is impossible to visit every locality at the peak of bloom, and this is particularly true of northern Chile, where conditions change rapidly within a few days or miles. For a seed harvest, a visit should be made perhaps a month later, yet when the fogs lift, as will become apparent later, plants mature and vanish within a few days.)

(To be continued)

* * *

Lime, like any other soil constituent or climatic factor, does not affect the plant independently, but only by, with, and through everything else.—CLAY.

REPORT OF THE NORTHWEST UNIT

HELEN MORRIS, *Bellevue, Washington*

THE JULY issue of the BULLETIN was a source of great satisfaction to members of our unit. We were pleased to see that so much of the material came from our membership. However there was disappointment on finding that through an oversight, credit was not given to Mrs. Kruckeberg, who drew our yearbook cover, which appeared on page 85.

We held our June meeting at the Pine Lake home of Mr. and Mrs. Page Ballard. Wet weather kept all but a few from exploring the woodland garden, something to which we had all looked forward. Carl English brought some interesting specimens for display: *Cyclamen balearicum*, tiny and fragrant, and *Talium okanoganense*, a jewel-like alpine, with translucent creamy blossoms resembling miniature water lilies, and like water lilies, opening in the hot sunshine. This is one of the plants whose discovery we owe to Mr. English. He also displayed two interesting annuals, *Alonsoa warscewiczii*, a red flowered member of the Scrophulariaceae from Peru, and *Collinsia heterophylla*.

Miss Una Davies, from Portland, Oregon, was our guest speaker, with her subject "Alpines along the Cascade Crest Trail." Miss Davies is president of the Naturalist and Trails Club of Portland. She had, at that time, hiked all but forty miles of the trail stretching along the crest of the Cascades from Canada to California, and planned to cover the remaining link this summer. She showed a slide collection which included much beautiful scenery as well as lovely plants.

In July, it was the pleasure of the Morrises to have the Unit come to our home for the annual picnic. This is the meeting where members prove their worth as cooks, rather than as gardeners, everyone contributing toward the evening's enjoyment—food! After the children had swum until chilled and everyone was thoroughly stuffed, we visited and sat by the fire as the crowd gradually thinned, according to children's bedtimes and parents' morning schedules.

A happy event not on the calendar took place on the evening of August 1, when Mr. and Mrs. L. N. Roberson entertained sixty-four members at a buffet supper in honor of Mr. and Mrs. Harold Epstein and their daughter Sue, who were here for a visit of several days. Supper was served on the terrace where we were completely surrounded by baskets and planters of glowing fuchsias in dozens of different varieties. After dark we went indoors to be shown Mr. Epstein's slides of Japan, which included India and Kashmir, on their way home. The pictures were especially pertinent since we had recently read his article about this trip, and we also had the first installment of Birdie Padavich's trip fresh in our minds. The views of the Japanese gardens with their serene beauty and immaculate tidiness were exquisite. The Epsteins gave their interests as "people, places, and plants," and we were treated to some of each, ending up with scenes of that very famous place, the Taj Mahal.

WALDSTEINIA FRAGARIOIDES

CARL STARKER, *Jennings Lodge, Oregon*

Waldsteinia fragarioides has somewhat the appearance of a potentilla with its leathery strawberry-like rich green leaves, trailing habit, and showy flat clusters of golden flowers in early spring. It roots as it goes and soon makes an attractive two inch ground cover mat. In winter the evergreen foliage takes bronzy to purplish tones and its leathery texture is most effective. It seems not too fussy as to soil, sun or shade, and can easily be propagated by division of rooted pieces.

REPORT OF 1956 ANNUAL MEETING

EDGAR L. TOTTEN, *Secretary*

THE 1956 ANNUAL members' meeting of the American Rock Garden Society was held on May 12, 1956 at the home and garden of Mr. and Mrs. John F. Knippenberg in Pines Lakes, New Jersey. The 65 members in attendance enjoyed the spacious garden in the morning. Mrs. Knippenberg presented an interesting demonstration of the art of propagation of azaleas, rhododendrons, and other shrubs. A delicious luncheon was then served, after which the business meeting was held.

Mr. Harold Epstein, president, conducted the meeting and commenced by thanking our host and hostess for their kind invitation to visit their beautiful garden and for the most delicious lunch served to us.

The president spoke of the excellent work being done by Dr. Carleton Worth, editor of the BULLETIN, and pleaded for more articles and cooperation from our members in order to assist Dr. Worth's work.

He also mentioned the excellent Seed Exchange directed by Mr. Bernard Harkness. The following was quoted from the latter's annual report: "We have sent out 3,276 seed packets to 126 members (31 contributors and 95 non-contributors). Judging from the enthusiasm in several letters, we shall continue to make new contributors and receive enough good material so as to expect the Exchange response to run along at about the same level."

Mr. Edgar L. Totten, secretary, then reported that the paid membership as of April 1st amounted to 558, an increase of 63 since his taking over the office on November 1, 1955. He prepared a list of members by states which show the leading 5 to be:

New York	113
Washington	66
Massachusetts	47
New Jersey	44
Connecticut	33

A bit of humor was injected into his report when he read some excerpts from recent correspondence reaching his desk. One of the questions asked was "How large are limestone chips?", and another, "What is meant by perfect drainage?"

In the absence of Mr. Alex D. Reid, the treasurer, his report was read by the secretary, which was summarized as follows:

Cash in bank at March 31, 1955	\$2,648.78
Receipts during the year	\$2,893.94
Disbursements:	
Bulletin Costs	\$1,961.30
General Expenses	635.94
	<hr/>
Total Disbursements	2,597.24
	<hr/>
Excess of Receipts over Disbursements	296.70
	<hr/>
Cash in bank at March 31, 1956	\$2,945.48
	<hr/>

Mr. Kurt Baasch, chairman of the nominating committee, then submitted the following names for officers and directors whose three year terms are now expired:

President, Harold Epstein
Secretary, Edgar L. Totten
Treasurer, Alex D. Reid
Vice Presidents:

Leonard J. Buck
 Frederick E. Landman
 Mrs. Harry Hayward
 Brian O. Mulligan
 Miss Elizabeth Gregory Hill
 Mrs. Coulter Stewart

Directors—Term expires 1958:

Mrs. Mortimer J. Fox
 Mrs. Dorothy E. Hansell
 Miss Alice Sutcliffe
 Mrs. Clement S. Houghton
 Dr. E. T. Wherry

Director of Seed Exchange, Bernard Harkness
Editor, Dr. C. R. Worth

As no further nominations were made from the floor, on motion made and seconded, the secretary was instructed to cast a ballot for the entire slate as nominated.

The meeting was then adjourned and the guests participated in a distribution of some of the Knippenbergs' azaleas, rhododendrons and other rare shrubs, which were made available in very generous quantities. We then resumed the tour of the remainder of the gardens, greenhouses and trial grounds.

The meeting was thoroughly enjoyed by all, and guests extended their appreciation to Mr. and Mrs. Knippenberg for their hospitality and generosity.

SALMAGUNDI

THE SOCIETY has recently received, as a donation from the Northwest Unit, a collection of 35 MM colored slides, all representative flora of that area. This collection, as well as the older ones, are available to members from the secretary, Mr. E. L. Totten.

* * * *

In a recent series in the *SATEVEPOST*, it was revealed that the town of Lanchow, in western China, (where Farrer and Purdom spent the winter of 1914-15) is now accessible by rail from the coast, as well as by air. The rail line is being extended westward through Sining, the jumping-off-point for their 1915 collecting, and also southward, presumably through, or at least near, Siku and Thundercrown. Yet these regions, so difficult to reach forty years ago, are now utterly beyond the hopes of westerners, in spite of the vastly improved transportation. This is a great pity, for the few Farrer collections from these regions which have been available to American gardeners have been fairly tolerant of our conditions, and it seems probable that many more could be grown here, were they only available.

* * * *

While we were engrossed in recollections of Farrer's tales of Kansu, the June number of *BAILEYA* arrived, and in it is an article by Hubert J. L. Rhodes, on J. F. Rock's 1924-27 expedition to Northwest China. Unfortunately it gives

only a brief sketch of Dr. Rock's activities and whets the appetite for more detailed information, but it does reveal the fate of the Prince of Joni, who ate, out of spite, the seeds of *Viburnum fragrans* which he had promised to save for Farrer, and includes a bibliography of all papers on the expedition and its results. Included are five plates, of Dr. Rock, of the fantastically beautiful mountains of the region, and of Lake Kokonor; their reproduction, by the offset process, has been remarkably successful. At least one plant collected on this expedition, *Daphne tangutica*, has recently been available from the Manitoba Hardy Plant Nursery, but has not succeeded in our garden. Another Rock expedition, in the early 1930's, financed in part by the University of California, was apparently to nearby regions. A few of the collected seeds were grown on here, and of them, *Androsace spinulifera* prospered for more than ten years, until in a most unfavorable season both the original plants and their seedlings all succumbed.

* * * *

A member of the Society has raised the question of whether plant breeders can create double flowers, or whether they must depend on Nature to do it. Presumably she means the creation of the first known double in a species or genus, for once doubles appear, usually it is a matter of no great difficulty to develop further double forms, if the original is not entirely barren of pollen. So far as our knowledge goes, doubles occur only spontaneously, and nothing in the art of the plant breeder can produce at will a double muscari or a double crocus. If anyone has further information on this matter, we shall be happy to publish it, and shall endeavor to obtain, in time for the January number, definite information on this point from the Department of Plant Breeding at Cornell.

* * * *

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A recent visitor, who asked where a certain plant might be obtained (fortunately we knew of a source of supply) remarked that a member of the Society is extremely reluctant to disclose the places from which rare plants have been obtained. It is more than likely that this seeming reluctance is actually the inability to remember offhand; let us hope that none of our members is unwilling to share knowledge or information. However, from time to time we are unable to recall the source of a particular plant, and labels usually disappear before we have forgotten the history of an individual specimen. Mrs. Wilder maintained an extensive card catalog of all the plants she had grown, together with their origin and their location in her garden. The upkeep of such a catalog involves a great deal of work, yet at times the information it contains may prove invaluable.

* * * *

This summer we have no complaint of heat or of drought, for in July there were 19 rainy days, with three others on which there was light precipitation, for a month's total of more than five and a half inches. Weeds and insects loved the moisture, and so did many plants; a few suffered from the oversupply, but unless dormant bulbs have been damaged, there are only two casualties to report: precious *Acantholimon echinus*, and an unimpressive double pink that had been given us, and for which we had no love. However, plants are weeks late in flowering, with *Gentiana asclepiadea*, *G. septemfida*, and sundry near relatives of the latter not beginning to bloom till mid-August, which leaves us wondering whether the really late Asiatic species will even bud before snow flies.

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