

BULLETIN

of the

AMERICAN ROCK GARDEN SOCIETY

Vol. 9

September - October, 1951

No. 5

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The American Rock Garden Society, incorporated under the laws of the State of New Jersey, invites you to join with its members in the pursuit of a better understanding of the problems of rock gardening. The annual dues are \$3.50. Address communications regarding the Bulletin to the editor, G. G. Nearing, R. F. D. Box 216, Ramsey, N. J. Other communications, except concerning the Seed Exchange, to the secretary, Dorothy Ebel Hansell, 19 Pittsford Way, Summit, N. J.

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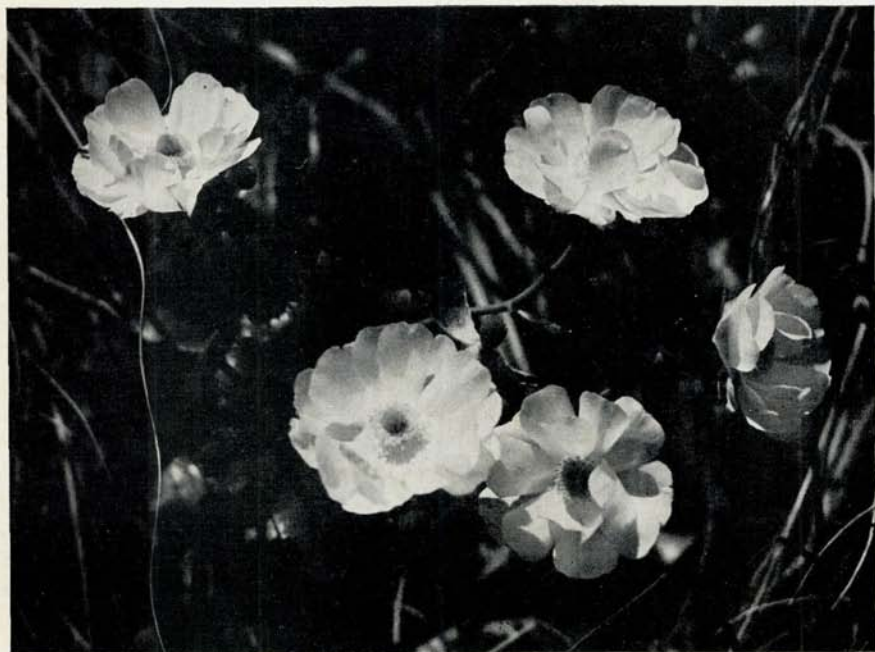
No. 5

OUTSTANDING FLOWERS OF NEW ZEALAND

MRS. C. WALKER, TE HORO, N. Z.

SOME at least of the New Zealand natives should grow in parts of America, as over here they can be cultivated, and in most cases do well. (Many prove hardy on the Pacific Coast, a few even in the Middle Atlantic region. Ed.)

Ranunculus Lyallii is a magnificent buttercup with large pure white or cream-colored flowers. Perhaps because its cuffed leaves resemble those of a waterlily, it is called mountain lily, sometimes Mount Cook lily. Specimens with flowering stems four feet high have been recorded, but the usual height is much less, and there is a dwarf var. *Traversii* with cream flowers. Another name, snow cups, describes the white form well. Where damp cool conditions can be given, the plant is well worth growing. Two other species, *R. insignis* and *R. lobulatus*, in character somewhat similar to *R. Lyallii* but both yellow, respond to cultivation.



The New Zealand mountain buttercup, *Ranunculus Lyallii*

Ourisia is known here by two names, mountain foxglove and snow primula, and the two best species are probably our finest and showiest flowers, after the mountain daisies and buttercups, for the alpine rock garden. One is *Ourisia macrophylla*, found in both islands, and growing in nature as low as 1,000 feet elevation, whereas the other, *O. macrocarpa* is restricted to the southern half of the South Island, usually above the 3,000-foot mark. Under ideal conditions, both plants may attain a height of almost two feet, and bear on each flower stalk from four to eight whorls of showy yellow-centered flowers, each not less than three-quarters of an inch across.

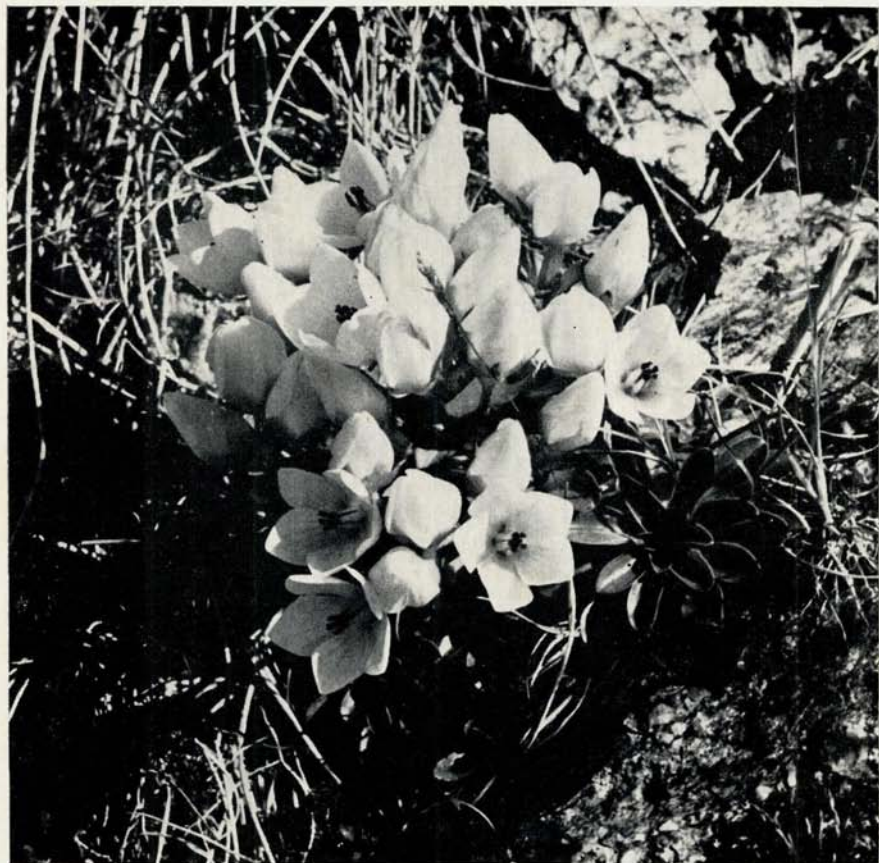


The mountain foxglove or snow primula of New Zealand, *Ourisia macrocarpa*

New Zealand gentians are uniformly white or streaked with pink. The snow gentian, *Gentiana corymbifera?* (*corymbiflora?*) is one of the most attractive, 18 inches or so high, with several flowers to the stem. Much dwarfer and one of the finest is the mountain gentian, *G. bellidifolia*, rising hardly six inches. *G. saxosa*, the shore gentian, has larger flowers almost like a lily. A real gem restricted to Marlborough and almost confined to limestone or calcareous soil is *G. Astoni*, with longer stems and many fine flowers. The snowball gentian, *G. divisa*, from Canterbury, is very attractive, with numerous stems branching into small domes of white flowers.

There are about sixty species of *Celmisia* in New Zealand, the largest called silver cotton plant, *Celmisia coriacea*, with leaves two feet long and white daisy flowers of three to five inches diameter clothed with cottony tomentum. Smallest is the silver cushion plant, *C. argentea*, which has densely packed, moss-like branches with close-set leaves a quarter of an inch in length and needly pointed. Quite a number are easy in cultivation and make excellent garden plants. In nature they grow and flower profusely in the sub-alpine zone, but are not often found at lower levels. Though several species are very constant in form, the majority hybridize freely. Almost all can be multiplied by means of seed sown in autumn or early spring in gritty soil made somewhat spongy by the addition of some Sphagnum moss dried and rubbed through a sieve.

Another New Zealand daisy is a really handsome shrub, *Pachystegia insignis*, found on limestone rocks and cliffs from sea level to 4,000-foot elevations in Marl-



One of New Zealand's white gentians, *Gentiana bellidifolia*

borough Province. The broad oblong leaves up to six inches in length form rosettes, and their under surfaces as well as the young stalks are covered with whitish hairs. The large daisy flowers on long stalks come in midsummer. Like many other saxatile plants which from necessity rather than choice root in narrow fissures, it grows

much more luxuriantly in cultivation than in its natural state. (On a trip in the South Island, I saw it, springing out of pure rock. The variety *minor*, a really choice rock plant, it is a miniature of the species flowering nearly a month later. (The species is cultivated in California. Ed.)

Since California claims the largest known conifer, *Sequoia gigantea*, I would like to mention that New Zealand has the smallest known, the pigmy pine, *Dacrydium laxifolium*. Trees of only three inches have been observed in fruit, but they sometimes struggle to two or three feet high if supported by the bushes among which they grow.

CROCUS SPECIES IN ENGLAND

RONALD GINNS, DESBOROUGH, NORTHANTS

IN the March-April, 1950 Bulletin, there was an article dealing with the cultivation of Crocus species in the rock garden. Those mentioned are the best known, and it is my intention briefly to take up some of the more desirable species not dealt with in that article, together with a few additional notes on those described.

First I would give a word of warning against the introduction of *C. speciosus*, *zonatus* and *Tomasinianus* into a small rock garden. They increase enormously, and the spring foliage may be so thick that no other plants can compete with it. The two former produce hosts of little cormlets too tiny to pick out, and by an ingenious root mechanism are soon pulled down deep into the soil, so that even the larger corms are difficult to find. *C. Tomasinianus* is a prolific seeder and I suspect that the seeds are carried around by ants. I find them cropping up in all kinds of odd corners, including plantings of choicer species, so that the species get mixed. All these species are best grown in the foreground of the shrubbery where they make sheets of color at times when it is most welcome.

In Mr. E. A. Bowles' "Handbook of the Genus Crocus" nearly a hundred species are described. In addition to these there are many wild varieties, some of which differ more from the type species from a horticultural point of view than some of the species do from each other. Some species again are so variable by nature that gardeners have segregated and named many more. I exclude from these notes the giant-flowered forms of *C. vernus* that make such a show in the spring garden but are totally out of place on the rock garden. For many years I have been on the lookout for new forms of the genus, and at the moment have about 120 species and varieties. Some need the shelter of a frame, as they come from the Greek Islands and the Levant, but the great majority will grow in the open in this garden in the Midlands of England. Crocuses flower here without a break from the earliest *C. pulchellus* at the end of August to the latest *C. Cvijicii* (What a name!) in early April — 7 months.

C. pulchellus is related to *C. speciosus* but is not nearly so vigorous. It is pale lavender in color, but when the two species are grown together, hybrids between them may occur. The white form of *C. zonatus* is one of the loveliest of the white Crocuses, very firm in texture, the solid white of the flower being set off by the golden patch in the throat which gives the plant its specific name. Another variety of *C. zonatus*, at one time known as *C. karduchorum*, lacks this golden ring and is a somewhat larger flower with slightly less pink in the coloring.

An autumn Crocus which closely approaches *C. speciosus* in size is *C. nudiflorus*. As the name indicates, the flowers appear before the leaves, and it has

the unique habit for a Crocus of running underground, so that it will appear in places very far removed from where it was planted. The flowers are a good purple, and it is not so invasive as *C. speciosus*.

A Crocus which is so distinct that it is sometimes given a genus all to itself is *C. iridiflorus*. The flower appears to be midway between that of a Crocus and an Iris, for the three inner petals are very much shorter than the outer ones (These outer are of course actually sepals, but most people think of them as petals), and the inner remain erect when the outer are fully expanded. It likes a moister, shadier situation than the majority of Crocuses.

Whilst I grow many autumn-flowering species, not one is yellow, the color usually associated with Crocus. There is one, awaiting collection from the shores of the Black Sea, known as *C. Scharojani*. It has been grown over here, but is one of the most difficult species to keep. It sounds most desirable, as the flowers are large and a rich orange yellow in color. It is the earliest to bloom, as it has been flowered in early August.

The fact that your contributor failed to keep *C. ochroleucus* need occasion her no disappointment. It is quite the poorest Crocus I have grown, small, flimsy, and off-white in color. A good white for October is *C. hadriaticus*, and following this in late November comes *C. niveus*, a very fine thing indeed. Another good plant for November is a variety I have of *C. longiflorus* which increases well and forms sheets of rosy lavender.

The last to bloom in the old year is *C. laevigatus*. This plant comes from Greece and the Greek Islands. The ground color may be white or lavender, with purple markings. These markings are very variable, in some forms almost obliterating the ground color. Whilst some will flower in October, others will carry the Crocus season well on into the new year, when they are joined by the first of the true winter bloomers, *C. Imperati*.

Space does not permit mention of the hosts of varieties that follow *C. Imperati* into February and March—many in fact will come out in January if the season is open. But if members of the Society who are interested in this genus and are visiting England would call, I can introduce them to many varieties that have not yet found their way into the lists of bulb merchants. Customs restriction, I am afraid, will not permit them to be sent by post.

SPECIES TULIPS ON LONG ISLAND

ALIDA LIVINGSTON, OYSTER BAY, N. Y.

THOUGH my habitation is in a worn-out cornfield, flat and stoneless, Elizabeth Lawrence, with her Notes on Species Tulips in the July-August issue, has stirred some thoughts in my head. I have played a little with these lovely things since, more than ten years ago, the late William Craig emptied the unsold contents of some brown paper bags onto my barren acres at the end of the season.

My tulips live on an exposed terrace dug out of a gravel bank for them in an effort to simulate one of those dreary Near-east pastures where goats thrive and cows do not venture. In the excavation, about three feet deep, some of the gravel remained behind, larger stones were added, and a fairly substantial mixture of clay loam and leafmold.

This terrace catches the autumn rains and all the snow the winter may bring. In spring it is decidedly moist, in summer baked dry. The tulips are planted deep, not less than six inches, sometimes more than eight inches, regardless of the fact that the bulbs are usually small.

Some of my experiences have been the same as Mrs. Lawrence's, some different. Here too *Tulipa saxatilis* sends up a large flapping green leaf in the dead of winter and nothing more. It does not even have the grace to disappear.

T. acuminata has lived apparently happily for two seasons of bloom, and is very ugly in my eyes. On the other hand I find the little pink *Aucheriana* enchanting, and it increases rapidly. Mrs. Wilder sounds a warning about *T. chrysantha*; the heavy felt blanket wrapped about its bulb is supposed to be dangerous, like flannel swathed about a baby. I have not found this so, perhaps because of the summer heat I provide. It blooms most regularly, and the five or six original bulbs have increased to over fifty.

Alas, I have no success story to tell about *T. Clusiana*, for this its second year may be its last. Here it certainly does not seed, and I have always thought of it as a sterile species. Its rather ugly relative *T. primulina* thrives and multiplies.

Though in full sun, *T. sylvestris* var. *major* is out to possess the earth. It sends stolons in every direction, blooms with abandon trying to masquerade as a field of golden daffodils. Unlike the smaller type, this variety is very fertile, and seedlings are easy to raise.

T. Marjoletti is nice and seems not to present any particular difficulties, but I am not sure that any of the Neo-tulipas look well when consorting with the true species.

I gather Mrs. Lawrence's tulips were all from one source, and this may account for some of our differences. Certainly my bulbs have given very different performances depending on where they came from. One batch of *T. persica* was miserable, while another, planted under identical conditions and at the very same time, increased at once, sending up tufts of fat green leaves and many jewel-like flowers. From the same not very satisfactory source, *T. praestans* has had a hard time getting established, but has shown such a will to live that I think all may be well in the end.

T. urumiensis, as grown in Canada, is neither rare, expensive, nor difficult. It looks like a yellow *T. tarda*, and is a little taller. From Canada too came *T. pulchella*, which for two years at least has given an excellent account of itself, sometimes sending two stems from one bulb with relatively large flowers somewhat variable in color, some almost violet and some a royal purple, all pleasing, none magenta. Many of these Canadian bulbs are grown from seed, and *T. Kolpakowskiana* has given surprising results. I knew it as a rather small flower, golden yellow marked with pink on the outside, not unlike *T. chrysantha*, maybe larger and the petals more pointed. But these Canadians, while retaining the characteristic prostrate gray wavy foliage, produce atop tall strong stems very large flowers which may be orange or scarlet as well as yellow. Filled with curiosity, I bought a packet of seeds. The type reappeared. There were no scarlets among my seedlings, but many tall large yellows and one dwarf with a flower like a golden coffee cup, carried a few inches above the foliage. Is this a naturally variable species, or does it cross with its neighbors?

T. Sprengeri and *T. tarda* have been with me from the beginning. *Sprengeri* is very persistent but does not increase readily here, so I have saved seeds. These germinate and grow easily, but my seedlings have not yet come to blooming age. *T. tarda* is very satisfactory, producing its pretty yellow and white flowers abundantly while also increasing steadily. I have also grown it from seed, but do not recommend the venture, for it is very slow, and the flowers when finally they do appear, are just the same as those of the parents.

Here *T. turkestanica* is rampant. Perhaps because I do not like it much, it reminds me of Star of Bethlehem, and I am not very fond of any *Ornithogalum*.

Mrs. Lawrence has tulips I have not yet attained, notably *Hageri*, *Forsteriana* and *Kaufmanniana*, though I have lots of seedlings of the last. A few she has not mentioned I have, such as *Greigii*, but I have not had them long. They still seem satisfied to stop with me however.

I must confess to an eccentricity — I do grow species tulips from seed. It is after all an innocent amusement, easy though very slow. The seeds should be sown in the autumn and allowed to freeze through the winter. They will germinate in March, one long cotyledon carrying the seed up with it on its tip. It will last for about two months, and nothing else will appear above ground, but below there will be a diminutive bulb. Because the cotyledon is fragile and the new bulb so small, it is well to sow in pots and keep these in a cold frame.

After the cotyledon withers, the bulbs ought to be kept bone dry. To save space I store them in peat moss and put them away in an airy attic. Replanting in the autumn and again letting them freeze. It would save work but require more space to leave the bulbs in their pots for two years.

The second March a true little tulip leaf appears, and each succeeding spring it is bigger, till one year there are two — and that means the flower is coming. No seedlings have bloomed for me under four years, most have required six, some even more.

MAKING A BOG GARDEN WITH SPHAGNUM

G. G. NEARING, RAMSEY, N. J.

HAND in hand with the rock garden goes the bog garden, for both aim to provide special conditions under which can be grown plants of rare and unusual beauty which will not thrive in an ordinary garden bed. While the rock garden accommodates chiefly those plants which require the freest possible drainage, the bog, with no drainage at all, caters to those which must have their roots always sopping wet.

In nature we find many sorts of bogs. The brookside bog follows the windings of any slow-moving stream, spreading wide at one point, shrinking to nothing at another, knowing no uniformity. Now it is a wet woodland, now a meadow, again an opening overgrown with bushes. Here it weaves among boulders, there it is a stoneless muck flat. Wholly different is the sloping bog where water oozes perpetually out of a hillside, for this location is not subject to the freshets which periodically devastate the brookside.

In each sort of bog, every few steps lead to a different condition, with a vegetation of its own. Water drained out of limestone poisons plants which delight in the seepage from granite. A sand bar awash invites species which could not live on nearby clay. To be told that a plant comes from the bog is not enough to enable us to care for it properly. We must also learn what kind of bog.

If we are to have a bog, it cannot be all these mentioned things at once, nor would we want it to be even several of them, for it would look like a hopeless clutter. The places which please us most have always an essential unity. And if our bog must be one thing only, best of all is the Sphagnum bog, alike the world over, with a special flora strange and delightful. Here grow the orchids *Arethusa*, *Calopogon*, *Calypso*, the most colorful *Habenarias*, *Cypripediums*, *Calla palustris*, *Narthecium*, *Andromeda*, the insect-eating plants, and countless other treasures.

Sphagnum moss covers perhaps a twentieth of the land area of the earth. Yet it has no roots, nor any firm hold on what it blankets. Under it is dead Sphagnum, its own decayed stems, which in a thousand years form peat, in a million coal. As fast as it grows upward it dies below. It stands upright because countless crowding stems of Sphagnum around it keep it from falling over. When you step on it, your foot sinks deep, and the tips curl in around your ankle, cool with eternal moisture. In its sopping tufts root some of the most entrancing jewels of the vegetable kingdom.

There are thirty or so species of Sphagnum, difficult to determine without a good microscope, difficult, in fact, even with the best of microscopes. After a little observation, you can learn to distinguish various growth habits and colorings, perhaps even to name a few of the more common species. The fairly robust *S. acutifolium* and the slender *S. fimbriatum* are fairly abundant in shady places, while the plump *S. cymbifolium* may be found more frequently in open locations exposed to the sun.

Wherever Sphagnum grows it creates acidity, and the common characteristic of the plants which thrive in it is that they require this acidity to maintain health. Therefore the moisture around it should be essentially stagnant. There should be no drainage or flowing floods to wash this acidity away, for even though without it the moss might remain alive, the plants for which it is to furnish a rooting medium might not.

You must understand that nearly every large Sphagnum bog in our region was first a lake. In the shallower parts, soil washed in from surrounding high ground, leaves and the trunks and branches of trees fell and accumulated in it until only a few inches of water remained. In this shoal the Sphagnum started, pushing always up and out, little by little winning the lake for the shore. As soil and the remains of vegetation continued to drift in, the rim of the Sphagnum widened and the lake narrowed, until at last there was no lake, only a bog. I have seen a lake so transformed within my own lifetime. Finally, the bog fills up too, and becomes dry land.

In seasons of drought, when water is comparatively low in the bog, the tops of the Sphagnum will often turn brown or whitish, and appear to be dying, especially in summer and under conditions of full sunlight. Unless it dries out completely, however, rains and dull autumn weather will soon turn it green again, with bright red tips for some species.

With all these facts in mind, choose the site of your bog. Individual ingenuity has hit upon a number of devices for retaining the water, an old bathtub, stoppered and sunk in the ground, a steel tank, a concrete reservoir, a hole dug to below water level near the bank of a pond, a low spot enclosed by dikes. In any case it must hold water, and the water must be maintained at a fairly constant level with no very perceptible flow. It must be first a stagnant pool.

This pool you fill with peat moss, which is merely the commercial name for ground-up peat. Properly the commercial product ought to be called moss peat, because it is peat derived from Sphagnum moss. Peat moss accordingly should be and used to be the common name of Sphagnum, because Sphagnum is the moss which produces peat.

As soon as the peat is thoroughly wet, and the wetting may take a long time, even weeks or months, bring growing Sphagnum from a wild bog which has ap-

proximately the same exposure to the sun. Do not try to stand it up as you found it growing, because to do so would require an enormous amount, and because too, in that position it will die. Instead, pull the strands apart, scattering them thickly over the wet peat surface. If this is done in late winter or early spring, each strand will turn up its tip, grow rapidly, and soon begin to branch. By the end of the season you will have a welldeveloped Sphagnum cushion.

Once the cushion has formed, you may plant in it any species which comes out of Sphagnum, with an excellent prospect that it will grow. Transplanting, in fact, is no trouble at all. But weeding will be necessary, for grasses, sedges and weeds rush in to establish themselves on the same tufts where you plant the orchids.



The bog orchid *Pogonia ophioglossoides* thriving and multiplying in a man-made Sphagnum bog

NEW DATES FOR THE SEED EXCHANGE

Miss Harding reminds us that the Seed Exchange season is now open, through September, October and November. This new regulation is made not only in fairness to her, so that she need not spend her entire Christmas season cataloging seeds, but more particularly for those recipients who prefer to sow in January. We are hoping to have the list in your hands about the first of the year, or only a little later.

We must consider also our foreign members, of whom there are now over fifty. Mails to many parts of the world are slow. The list has not only to reach them (one trip), but they must send in a request (two trips), and then the seeds must be mailed to them (three trips). Even to distant parts of continental United States, the time consumed runs into weeks.

Mrs. C. Walker of Te Horo, New Zealand writes appreciatively, "Your seed is germinating now and I am really thrilled..... I am the envy of my friends with my overseas seeds." Mr. Motonosuke Ozawa of Tokio, Japan, informs Miss Harding, "The seeds sent me last spring are growing well except *Anemone sylvestris* and *Cyclamen coum*. Would you mind sending me some *Cyclamen* and *Dryas*? I love insectivorous plants so much, so if you know a member who love it, tell me their name and address, please." Mrs. Walker and Mr. Ozawa have contributed much seed to the Exchange.

Remember that it is an exchange, a co-operative arrangement by which all benefit. Collect seeds carefully from your choicest plants, remembering too the best of our natives, which overseas members may particularly want. Wrap them securely, mark them legibly, and mail to Miss Madeleine Harding, 22 Robinson St., Cambridge, Mass. The seeds should come of course from plants suitable to the rock garden. If these seeds arrive in Miss Harding's hands before the end of November, you will be listed as a contributor to the Exchange, and your requests for seeds after you receive the Seed List will be given preference over Society members who do not contribute.

Seeds arriving after December first cannot be listed, because the list will be sent to the printer immediately on completion. So let us all help the Director by sending our seeds to her, not at the last minute, but in plenty of time.

MEMBERS CAN HELP THE SOCIETY

When it was decided not to raise the dues of the Society, other means of providing money to meet our increased expenses were brought up for consideration, and it was felt that members would be glad to support some of them. One such source of income is the sale of back numbers of the Bulletin.

Libraries, new members of the Society who want to become better acquainted, and old members who through accident have lost certain issues from their files, are continually calling on us to supply these copies at the price listed on the last page. Some volumes are already exhausted, others disappearing fast.

Now we should like to feel that all our members treasure their files of the Bulletin and turn back to re-read them from time to time. Actually we know that some of our most honored members do little reading, or have their time so taken up with other matters that there is little left for the past. We feel regretfully certain that many copies of the Bulletin, once read, are thrown on a heap of magazines later to be carried to the attic, and eventually disposed of as old paper.

If you have a friend whose Bulletin takes this route, see if you can't get him to contribute the unwanted copies to our supply file. We are short of volumes even as recent as 1948 and 1949. There are none left of 1943, only limited supplies of other years. Mail them to the editor, and you will be helping the Society both financially and in its service to the rock-gardening community.

OBSERVATIONS ON PHLOX ADSURGENS

EDGAR T. WHERRY, PHILADELPHIA, PA.

THE discussion about this *Phlox* on page 49 of the May-June issue of the Bulletin deserves some continuation. In the course of my preparation of a possible monograph on *Phlox*, I have visited the type locality (Canyon Pass) and other stations for this beautiful species. It proved not to grow in "alpine meadows" as English rock gardeners think, but on wooded hill slopes under both deciduous and evergreen (coniferous) trees. I even saw it in sterile clay soil of road cuts through upland woods.

And it has once been grown and flowered successfully in the east, namely in the garden of Richard C. (Dick) Harlow near La Anna, in northeastern Pennsylvania. It thrived there for several years, blooming so well that seedlings appeared around the original clump. Then when Harlow was away in military service, his "caretaker" allowed thick layers of tree leaves to cover it, killing it out.

I have just visited Harlow's garden to obtain data as to the conditions under which it had thrived. My maximum-minimum thermometer showed 87° F. in the July air, and 62° F. in the moist gravel where I had seen and photographed the gorgeous flowers in previous years. Here, then, is one suggestion, — its roots should be kept cool in summer. Again, the moisture (from a natural spring) and gravel are not at all limy, but distinctly on the acid side, so a second suggestion is indicated, — exclude limestone from the rock garden where it is to be grown. Finally, the site is on a north-facing slope, with trees up the hill to the south, so that sunlight reached the plant only sparingly and temporarily. A photograph showing how well it bloomed was published in the Bulletin, volume 4, page 18, March-April, 1946.

The editor owes Dr. Wherry an apology for never having seen his photograph, as the issue in which it appeared was, until very recently, missing from the editorial file.

MORE INFORMATION ON PHLOX ADSURGENS

FLOYD W. MC MULLEN, PORTLAND, OREGON

I was interested in the comment on *Phlox adsurgens* in the May-June Bulletin. I don't know that I can shed much light on the failure of Mr. Pitchford's plant to bloom. *Phlox adsurgens* has never been fussy here about either growing or blooming; however I have noticed that most flowering is on stems of the previous year's growth. Occasionally in the past when I have cut the plants back in winter or spring, they have grown well but failed to blossom.

Perhaps one thing that is least understood in other parts of the country is the extreme drouth condition that prevails in western Oregon in the summer. Modford, in the heart of the *Phlox adsurgens* country, has just had a very light shower that ended a period of 107 days without rain. While this summer has been drier than usual, the average summer precipitation along the Pacific Coast in the interior valleys is much lighter than in any other part of the country.

Phlox adsurgens, along with many other natives here, remains evergreen but dormant during the summer. After the first real rains, usually in the latter part of September, there is considerable growth until December, when freezing weather commonly forces another dormant period of two or three months.

Several points should be emphasized: *Phlox adsurgens* is a plant of open, dry woodlands from near sea level to about 5,500 feet elevation in the Siskiyou and Cascade Mountains: can stand a lot of drouth in the summer and a lot of moisture in the winter. It is quite hardy, I believe, to at least 25° F. below zero. It is usually evergreen, but sometimes exposed plants here at Portland suffer from the very dry winter east wind that is the curse of the gardener here. It is also, I consider, in its best forms, the loveliest of a very lovely genus.

READERS' PROBLEMS

Miss Doretta Klaber, Quakertown, Pa., offers replies to two of the questions posed in our May-June issue.

"In reply to Mr. Pitchford's remarks about gentians, my last year's seedlings of *G. acaulis* have not yet bloomed but are growing slowly. However, last year's seedlings of *G. hascombensis*, *G. Bisetae* and *G. gracilipes* have all been blooming their heads off in a gravelly soil in full sunshine where they get plenty of moisture (natural or artificial), with heavier soil below and good drainage to a lower level. This year's seedlings of *G. angustifolia* are coming along well, as are various ornata hybrids, verna and verna angulosa, and a few others.

"As for mulching, the primroses and other plants in the woods get a natural mulch of leaves in the fall, some which I remove in the spring where they seem too heavy. My whole rock garden gets a mulch of stone chips (the bluestone of drive-ways) mixed with compost, sand and peatmoss — really a top dressing, which I put on in the fall, usually in spring as well, and any time the soil looks washed out around my plants. The stone chips do not entirely take care of the matter of heaving (a little personal pushing back is frequently necessary) but the more chips there are, the less heaving. The only things that get any sawdust in my garden are blueberries, Azaleas and such acid-loving plants."

Mr. Roland G. Gamwell of Bellingham, Washington writes: "In the July-August Bulletin you refer to 'rock gardens of limestone.' Are there cultivated rock gardens of limestone? Are there many lime-loving rock garden plants? The question is not critical, but for information,"

Of all the forms of rock which can be used for rock garden construction, limestone is undoubtedly the most favored. But it must be remembered that under the broad classification of limestone, countless varieties are included, ranging from the highly irregular and most desirable tufa, through kinds which weather into pleasing shapes, to the relatively uninteresting white limestones of square cleavage.

Chemically too they vary from pure calcite and marble at the one extreme to calcareous shales in which only a little lime is present, and again to mixtures of calcium and magnesium carbonate, and to the magnesium extreme of serpentine. Lime-loving plants will accept almost any of these forms, but to builders of the aesthetic rock garden the limestones of certain localities are prized for their appearance and for the pitted surfaces which permit planting here and there over the exposed faces, while those of other regions are held in low esteem.

It was Reginald Farrer who set his stamp of vehement approval on the pitted limestones of neutral gray tone, and how could the rock gardening fraternity fail to follow that master of rhetoric and railery? However, in the last analysis, the most appropriate rock to use is that which is native to the locality where the rock garden is built, and the most satisfying effects are secured by choosing and extending natural outcrops.

Some of the most famous rock gardens employ sandstone, and square blocks of it at that, such as are seen at Kew and Leonardslee. If the detailed effects are less striking, the broad contours, which count the most, can be just as architecturally right, and planes of stratification can be used more effectively with these rocks of severer lines. The weakness of those wavy surfaces in the limestone is that in design they lack definite purpose.

A modern trend is toward the mixed rock garden, with one section of limestone and another of granite, the two well separated, of course, and more or less hidden from each other. Although this divided construction requires extreme skill to prevent conflict in design, it does serve to grow a wider variety of plants than the unified garden of one mineral can accommodate.

For many of the choicer alpiners, particularly those of the Heath Family require an acid soil, which is difficult to maintain on limestone, while other races, equally desirable, including the best of the saxifrages, must have lime to be happy. These extremist plants do seem to call for a dual rockwork.

To list the plants which prefer lime, and to give some idea of how strong the preference is, for some will not grow at all without it while others merely thrive a little better in its presence, calls for an article by one of our most experienced members, or even better, articles by three or four members, because scientific accuracy in this field is not easy to arrive at, and opinions often fluctuate. Most books on rock garden plants lay great stress on the lime preference for each genus and each species.

The general question of choice of rock also needs more discussion in our pages, elaborating the few hints given in these paragraphs, and perhaps contradicting them. Tides of opinion on this subject set strongly in one direction or another, changing from year to year.

PUBLICATIONS OF INTEREST TO ROCK GARDENERS

Miss Madeleine Harding of Cambridge, Mass. sends in the following notices of articles which have appeared in recent periodicals:

In MY GARDEN for July, 1951, is an interesting article on cushion plants called the "Bunnery" by Will Ingwersen. "Some of the most tricky of alpine plants," says Mr. Ingwersen, "come within the 'bun' category and a feeling of conscious pride may well pervade the being of any enthusiast who can produce hard and healthy hummocks of such plants as *Androsace helvetica*, *A. imbricata*, etc."

Also in the same number is an article on "Favorite Smaller Irises" by H. E. Bawden, describing a dozen or more suitable for rock gardens.

In HORTICULTURE for August, 1951, Miss Mabel E. Turner of Antrim, N. H., advocates certain wildflowers, as *Tiarella cordifolia*, *Aquilegia canadensis*, *Sanguinaria canadensis*, and several others as suitable for the rock garden, pointing out that here is an opportunity to further conservation by establishing plant colonies on the home grounds.

Again, in the same number William I. P. Campbell of Smith College strikes a happy note from the point of view of international good feeling, by telling how successful their Seed Exchange has been.

Dorothy Ebel Hansell of Summit, N. J., lists these additional articles:

MY GARDEN, September, 1951, p. 237

A Sunless Rock Garden, by Arthur S. Johnson

GARDEN JOURNAL of New York Botanical Garden, Sept.-Oct., 1951

A Miniature Rock Garden, by Robert M. Senior, p. 130

Notes on the Alpine Conference, by Helen M. Fox, p. 139

We hope that Miss Harding and Mrs. Hansell will continue to keep us informed about such articles.

HORTICULTURE for September, 1951, contains an article entitled Making a Rock Garden, by Stephen L. Hamblin of Lexington, Mass., discussing in particular the choice of rocks, a theme interesting without end. He suggests artificial means by which raw rocks can be weathered, using acids and fertilizers.

The editor is reminded of a time when he had to prepare natural rocks for an unveiling. Some had unweathered faces, while those weighing more than a ton had been scratched in handling. Black and dark green watercolors properly diluted, remedied the defects for the moment, and surprisingly, the effect lingered on until nature could take a hand. After all, the black pigment was nothing but soot, and soot was a considerable element of the natural weather-coloration. The green was a substitute for the microscopic algae which could not be summoned in time to give the soot its modifying tint.

ANNOUNCING A NEW CONTRIBUTOR

WITH its November-December issue, the Bulletin will initiate a series of studies in rock garden plants by a noted British authority. He will give us estimates of a wide variety of plant material, not of course the common things that everybody knows and everybody can grow, but rather those rarer and finer gems to which every rock gardener worth his salt must naturally aspire.

Those of our members who grow plants for sale will be particularly gratified to read these opinions and observations. Each species or horticultural variety added to the always growing list of rock plants deserves a great deal of thought and consideration, both as to its merit and the conditions under which it can be grown. Estimates in advance are always welcome, and all down the long trail from first offering to general public acceptance, revised opinions and reconsiderations should be just as valuable.

By the same token, members who buy plants want to find out more about those still in the hazy distance, to know in advance whether they are to become available, and if so, what is the chance of succeeding with them in a given spot.

So let us continue to hear also from our only moderately expert and only somewhat experienced members, how the plants they already have are thriving, in what regions, and under what conditions. The purpose of the Bulletin is to exchange information and compare results. Because we have members in every part of the country, we need articles from every part. After a plant or group of plants has been discussed by an authority, we want to hear about it from other sources too, from different places. Only so can we enlarge our field of knowledge.

Supplementing these sources of information, our members like to hear also about trips into the mountains. Few of us can go often in person to these distant places from which come, not only our plants but our inspiration as well. The Bulletin would like to carry in every issue some account of a venture into the higher regions where, surrounded by cliffs and peaks and overlooking tremendous vistas, bloom the little tufts and tussocks with big flowers. To read about an experience of someone else stimulates the imagination until we feel almost that the adventure was our own.

MRS. FLORENS H. DeBEVOISE

WE regret to announce the death on October 13th of one of our founding members, Mrs. Florens H. DeBevoise, long active in the Society, an enthusiastic gardener, and the deserved recipient of many honors. Those of us who have visited Cronamere at Greens Farms, Connecticut, where she recently entertained the Society at an annual meeting, will not forget the extent, the designing, or the rare and tasteful planting of the rock gardens.

Mrs. DeBevoise was born in Oakland, California, and lived at Carlsbad, New Mexico, before coming east. In 1929 she started the Cronamere Alpine Nurseries as a hobby and avocation, and to be of educational benefit to garden club members. It continued until 1941, when it was closed down because of the war. During that time its catalog listed probably the largest collection of alpine and rock garden plants in the country.

Mrs. DeBevoise took several courses in botany and landscaping, supervised the building of numerous rock gardens in Connecticut, New York and New Jersey. She built also Japanese gardens, one of which received a special prize at the New York Flower Show. In 1936 she was awarded the gold medal of the Garden Club of America for another garden at the New York Flower Show.

After the closing of the nursery, she continued to raise plants, even though help was difficult to procure. She worked on miniature gardens and the dwarfing of plants. Among her many other activities was photography, her collection of about three thousand colored slides of gardens having been shown to various garden clubs.

Outside the field of gardening she engaged in such diverse activities as wood-carving, crewel work, which is a modernized form of early Jacobean embroidery, and an original study in combinations of semi-precious metals with seashells, out of which she created both miniature gardens and jewelry. In each of these fields she worked with characteristic enthusiasm and thoroughness, studying her technique under the best teachers available.

With all these interests, rock gardening unquestionably dominated her life, and with her passing it has sustained the greatest loss. Her help in the affairs of the Society will be sorely missed.

REGIONAL REPORTS - NORTHWESTERN

FRANCES KINNE ROBEBSON, SEATTLE, WASHINGTON

OUR local unit of the A.R.G.S. has had a busy summer, of which a hasty summary might be in order.

The meeting of June 14 concerned Scree Gardens, with a visit to see a garden scree at the home of Mrs. Henry Bittman, and a second section of the meeting at the home of Mrs. Carroll Gilson, at which time Carl S. English, Jr., talked about Natural Screes.

The July 12th meeting was a picnic at the home of Mr. and Mrs. L. N. Roberson, with a good attendance in spite of the vacation season. Dr. C. Leo Hitchcock gave an interesting talk on Ferns, with pressed specimens to illustrate his remarks. Some of the members brought living specimens also.

Two trips were made to Stafford Creek, one to see the plants in flower and a later one to collect seed. The latter trip was made the second week of September. Seven members of the party made the climb on Saturday to Miller Peak. There were too many points and plants of interest to mention them all, but a few cannot go unnoticed.

A shaded brook which must have been a torrent in early summer was all but obliterated by masses of *Dodecatheon dentatum* (white flowered) whose seed had

evidently been food for some little animals, since only an occasional stem bore its seed pods intact or even partly filled.

A chimney and outcrop of rock just off the trail supplied one of the most interesting spots of all. *Clematis columbiana* scabbled over the scree rock, and those who had seen it in bloom described the lovely blue flowers for the rest of us. An unusual form of *Penstemon rupicola*, very gray-leaved, faced some of the pockets.

A small Polypodium lined the shaded crevices to the north, and *Cheilanthes gracillima* grew in the sunnier exposures. Saxifrages, Sedums, and many other crag-dwellers made this a spot we were loath to leave.

But the summit proved as interesting as the half way point. *Douglasia dentata*, *Erigeron compositus*, *Penstemon* in variety, and many other treasures rewarded our climb.

The next day, Sunday, twelve of us drove to the beginning of Rock Creek Trail, which led us between Hawkins and Esmeralda Peaks to a beautiful lake whose grassy shores were studded with clumps of *Gentiana calycosa*, grass of Parnassus, *Phyllodoce empetriformis*, and many less conspicuous bog dwellers. Some few plants of *Kalmia polifolia* grew along the very edge of the water, and must have been submerged part of the year.

The rocky peaks above us shut out the view of nearby Mount Stuart to the northwest, but the open vista to the south framed Mount Ranier in all its snowy glory.

Both trails led us past treasures of great worth, which can hardly be hinted at in this short account, but the richness of the experience, felt in the exhilarated mood of the occasion, will remain a treasured memory for each of us.

In August a trip to White Pass in the Mount Ranier region proved hardly less rewarding.

MINUTES OF REGULAR MEETING

THE Washington Unit of the American Rock Garden Society held its regular monthly meeting on Thursday, September 13, 1951, at the home of Margaret Watt and Helen Luebbert. The balmy weather made it possible for everyone to enjoy a good look at the garden before going inside to begin a round table discussion of "Successful Rock Plants in My Garden". Strange to say, *Lewisia* figured heavily in the remarks made, and other choice alpinines as well as some of the more commonly grown rock plants were listed as successful in the members' gardens. As an incentive to participation, Scott McClanahan offered two plants raised from cuttings of a branch displayed at one of the spring meetings by Brian Mulligan.

A brief resume of the seed collecting trip made by some of the members on September 8 and 9, was given by Mr. Mulligan who listed some of the kinds of seed collected and described the route followed by the party.

Announcement of the annual dinner meeting, to be held in October at Crawford's, was made by Margaret Mulligan, and the menu was discussed.

Neill Hall mentioned the culmination of the photograph contest in October.

The final business was the election of officers. The report of the nominating committee - composed of Birdie Padavich, Margaret Watt and Scott McClanahan - was given by the chairman and adopted unanimously by the group. The new officers are:

- C. Leo Hitchcock - Regional Director
- Mrs. Page H. Ballard - Vice Director and Program Chairman
- Mrs. S. A. McClanahan - Secretary-Treasurer

Copies of the present mailing list were distributed for the information of the members.

The hostesses served delightful refreshments after the meeting adjourned.

FRANCES KINNE ROBERSON, *Secretary*

Have you spoken to that friend who has a rock garden and is not a member of our Society? Always we need more members to replace those who pass away, or who become absorbed in other interests. Sometimes it requires only a word or two to induce another to join. Or in the course of conversation about plants, you may be reminded of an article you read in the Bulletin. What more natural than that you should fetch your copy and lend it to be perused?

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Further particulars regarding the Alpine Garden Society may be obtained from the Secretary, C. B. Saunders, Husseys, Green Street Green, Farnborough, Kent or, better, from Mr. C. R. Worth, Groton, New York, who is one of the Society's Ass't. Hon. Secretaries (foreign).

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- 3 Volume 6 (1948)
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