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PRIMULA AURANTIACA
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THE PICTURE ON THE COVER: The beautiful Primula aurantiaca on the cover was sent to the Quarterly by Doretta Klaber. She does not say who took the picture but it is very evident it was a professional. She says “Primula aurantiaca at Cloud Hill in a long bed of mixed candelabras where earlier P. rosea and P. frondosa give color, then Japanese candelabra, then the later hybrids and species.”

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AMERICAN PRIMROSE SOCIETY
Adventures With A Rock Garden

The use of primulas in a New England rock garden

By BETTY JANE HAYWARD

When the rock garden craze started about thirty-five years ago, circular beds and rough banks fitted with stones standing on end were frequently seen. These rockeries were usually planted with the coarser sedums, snow-in-summer, the common spurge and other rank-growing perennials and annuals. With little beauty to recommend them, and with the difficulty of keeping weeds and grass out, enthusiasm soon waned. Fortunately few such monstrosities remain.

At the same time, gardeners, appreciating the beauty and adaptability of alpine plants were trying to provide suitable places in which to grow them successfully. As a result, today, there are more good rock gardens than poor ones.

There are numerous reasons why the home owner finds use for rock plants. Occasionally it is admiration for the plants themselves. More often, it is because of their suitability for use in ledges, walls and steps. Frequently, banks or slopes make the building of a rock wall or rock garden necessary to complete the setting.

Make the Most of Ledges

An outcropping ledge suggest a rock garden as the best method of bringing it into the overall design. Thus, the desirable plants to use are those that grow in association with rocks in their native habitat.

Much has been written about the great desirability of using limestone in the rock garden. In nature, many alpine plants grow and flourish on lime rock formations. There are countless other species, however, that thrive in granite. Some are found growing equally well on both. Actually, plants are surprisingly adaptable. In cultivation, they quickly accommodate themselves to conditions that exist.

In New England, for example, stratified limestone, however beautiful, is rarely available. Granite, in a number of types, is the common rock. In exposed ledges near the seacoast, gneiss predominates, a gray, weathered rock that is seldom congenial to the growth of mosses and lichens. Inland, a rougher rock prevails. For practical purposes, it makes sense to use the type of rock at hand. Then, too, the rock common to the locality will look best and most natural, and it should be the same kind throughout. Round field stones are seldom desirable.

In adding rock to a natural ledge in order to make pockets of soil and to increase the planting area, all construction should follow the existing strata to look right. In building a rock garden in its entirety, it is wise to decide before the construction starts in what general direction the strata is to run. Then adhere to it consistently as the work progresses.

Collect Your Rocks

Broken, irregular rock found in ancient stone walls, on farms and along country roads has much to recommend it. The larger, uneven pieces can be assembled and fitted together to make a creditable ledge effect. With it, good crevices can be made to accommodate the plants that enjoy a tight fissure in which to live. The encrusted saxifrages, the choicer sempervivums, some of the alpine primulas and many other alpines belong in these crannies.

If care is used in handling them, lichens and mosses that enhance the beauty of rocks can be preserved while making the rock garden. These encrusted growths develop in beauty with each passing and suggest age and permanence as well. In rainy weather, they are all the more attractive.

In selecting plants, beginners choose the rapid growers, valued for their profuse flowering, to create a colorful spring display. Such perennials as creeping phlox, alchemilla, hardy candytuft and violas produce lavish color. However, the rare and unusual kinds offer a challenge to the serious gardener desirous of collecting little known alpines. Many of these are noted for their exceptional beauty, but sometimes present problems. The various gentians, some of the campanulas, the encrusted saxifrages, the choice auriculas and a host of other gems are all worth the effort they require.

Actually, the most satisfying accomplishment is to combine the two groups in some measure. The free-flowering mat-forming kinds afford notable opportunity for creating charming effects. The ideal rock garden is one in which the whole area reflects the thoughtful plan of the designer with color masses distributed for a pleasing effect. The choice, small plants need preferred placement, so that they can be enjoyed at close range without being obstructed by the more rampant growers.

In my garden, I grow many auriculas in shades of purple, lavender and pink, arabis in pink and white, yellow and lemon colored alpines and several forms of creeping phlox or moss pink. Hardy pinks and bright pink soapwort (Saponaria ocyoides) are used for later bloom, with several kinds of violas intermingled.

Distribute Your Color

Some of these rapid growers are brought into the choicer areas, too, to grow out of the walls, along the

The author's garden is widely known for a notable collection of auriculas

Photograph Courtesy Horticulture

AMERICAN PRIMROSE SOCIETY
path and over the large rocks. By doing this, color is distributed effectively throughout the garden. At the same time, the choicer plants are kept from being overrun by their more stalwart neighbors.

Something in flower from earliest spring to mid-November is the aim in my garden. The first and the last bloom comes from bulbs. In mid-March snowdrops, winter aconite and species crocus open in the warmth of the early spring sun. The wild or species crocus which are my particular delight can be had in a wide variety of colors. I make it a point to add some new species and varieties to the garden every autumn. Furthermore, I have found it rewarding to plant the autumn crocus in the same location as the spring flowering kinds for the effect of repeat bloom.

At the top of the garden where the sun shines abundantly, a charming group of tiny Narcissus minimus comes into bloom with Bulbocodium vernum—a striking combination of yellow and rosy lavender. Bulbocodium vernum is a lone species, sometimes listed with colchicum. The chalice-like flowers with the long petals are like strips of rosy silk.

Small bulbs of various kinds add both beauty and interest. Many when established become permanent, and each spring the group spreads with an increase of blossoms. It is wise to give thought in placing them for, without exception, they withdraw into the ground after flowering and the foliage has ripened. Little corners in the steps and nook beside rocks where they are unlikely to be dug up are ideal.

Favorite Spring Bulbs

Every gardener has his favorites among the spring flowering bulbs, and here are mine. Of the species crocus, the lovely Crocus chrysanthus strains, in all shades of yellow, from the palest to near bronze, are particularly delightful. The dainty sky blue Hyacinthus ciliatus, often listed as Muscari azureum, and its white form, as well as the little striped squill (Paschkinia scilloides) are others. The guinea-hen flower or frillarias, especially Fritillaria meleagris alba, and glory-of-the-snow (Chimonodoxa luciliae gigantea) notably large and paler than the type, are most satisfactory. The small Tu-lipa tarda (T. dasyystemon) is most harmonious with its large pale yellow flowers that open flat to the ground. Many of the species types in bright scarlet and must be carefully placed.

Among the earliest anemones to bloom are two from the Mediterranean region, Anemone blanda and A. apennina both blue. Pasque-flower (A. pulsatilla) is particularly showy and mention should be made of the robust variety Budapest, with pale blue flowers which open two weeks earlier than the type.

In a garden where there is shade for part of the day primulas will flourish. The first to bloom in spring is an alpine species, Primula marginata, with pale blue-lavender flowers borne above attractively-margined foliage. P. rosea follows soon after, with buds as red as sealing wax opening to brilliant pink. Clumps of the showy polyanthus are grouped beneath a Sargent crab-apple. Forms of P. auricula, which have always been a feature of the garden, are used everywhere among the rocks and in the walls. They add a touch of refinement and delicacy.

Bellflowers in Variety

The bellflowers or campanulas can be had in numerous forms. Time was when the tussock bellflower (C. carpatica) held the field, but now two natives of Dalmatia, C. poscharskyana, with stary flowers, C. portenschlagiana, with blue upturned cups, are commonly grown. C. saxifraga, with exceptionally large blue bells, and the tiny C. cochlearifolia, in blue and white, and many others are fairly easy to obtain.

Dianthus contribute abundant color to the summer garden, and if cut over after flowering, the soft-textured gray mats are always attractive. The numerous small species found in catalogs are the choice spots, while Dianthus plumarius varieties make a great show in the walls.

Another family greatly admired is the gentian tribe. Members have a reputation for being difficult, but I have not found them so. Like the primulas, they enjoy some shade from our hot summer sun. Most are very hardy, and added years of growth results in superior bloom.

Gentians are varied as to type and size. The blossoming extends from spring to late autumn, depending on the species grown. Gentiana verna, which is among the early ones, has always grown well here. The well known stemless gentian (G. acutis) is present, but never gives a good account of itself. I continue to hope it will settle down and do some blossoming.

Choice Gentians

One of the earliest gentians to grow and keep is G. septemfida, which has lived and bloomed for many years in my garden. Several of the taller kinds, 15 inches or more in height, like the willow gentian (G. asclepiades), with flowers of deep indigo, are especially attractive. G. gracilipes is lower, with good blue flowers, and G. scabra buergeri, with pleasing blue trumpets, blooms very late, even into November.

Perhaps the most thrilling of all are the beautiful gentians from the Himalayas. There is wide variation among them, and each one is lovely in itself. The flowers which range from turquoise to deep royal blue, bear stripes on the outer sides of the petals, a characteristic of this group. They enjoy some peat and leafmold in the soil and are said to dislike lime, but I have not found them difficult. A few I have grown include: G. forrerl, G. macaul-eyi, G. sino-ornata and G. ornata (veitchiiium).

Care Is Simple

The care of a rock garden is fairly simple. If the proper work has been done in autumn, little other than removing the covering is needed in spring. When hot weather comes and the first flowers have passed, it is time to do a good job of weeding. Cut back the mat-forming plants after flowering. Otherwise, they become leggy.

In autumn, a top light scattering of sifted loam, bone meal and humus in some form should be spread over the whole garden. Use stone chips under the leaves and around small alpines, and never any woolly-leaved plants, since they require rapid drainage. When all has put into good order, the garden still looks attractive with healthy mats of gray and green foliage. A covering of some sort is must in the northeast. Evergreen boughs, marsh hay, straw, or cran-mulch may be used.

Autumn also is the time to prepare a coldframe for planting the precious seeds that have been gathered from the choice plants or ordered locally or from across the sea. Preferably, it should be placed in a spot where it will have shade part of the day. Ordinary sash or one of the new plastic materials will keep out heavy rains, birds and animals.

Sift the soil before planting seed and sow in short rows. The ideal winter cover for seed of alpines is a blanket of snow. Otherwise, keep the frame covered to prevent damage.

(Appted from Horticulutre, March, 1956.)

A.P.S. ANNUAL MEETING

GENERAL ELECTION OF OFFICERS will be held at the annual meeting of the American Primrose Society, October 25, 1957, at the University of Washington Arboretum Clubhouse, at 8 p.m. Members in good standing, who are too far away to attend, may send to the Treasurer, Mrs. Orval Agee, 11112 S.E. Wood Ave., Milwaukie 22, Oregon, for a ballot. Marked ballots must be returned to the Treasurer before the annual meeting.
Double Duty Gardening

Good advice from one who has found that some extra work and planning will produce a riot of color almost the year round in the same ground.

BY R. M. BELLISS

This story is for dirt gardeners only. A dirt gardener is one who has captured the peace of mind and clear thinking that comes with working alone in the earth with flowers. If your garden work is a chore, just skip the rest of this story because double duty gardening not only means garden beauty but extra garden work.

Modern gardeners tend to become specialists. They can see but one or two flowers. The old idea of a garden that blooms from early spring to late fall has given way to exhibitions of primroses, roses, or dahlias. How can such a garden be arranged? What becomes of the daffodil bed when the leaves turn brown?

The trick is to have a spare garden out of sight to all except the very curious and a ten-foot fence would not keep them out. This idea was born when the question of what to do with primroses in May after they had made a blaze of color all along the terrace since the end of February. They were too good to throw away and too unsightly to leave. The spot had been ideal for begonias and fuchsias. So the primroses were dug up, divided, and planted in a vacant spot at the end of the property. Then the begonias were planted with the fuchsias in half nail kegs, brought out of the sun, and placed behind them on the first of June. By the middle of June the terrace was once again alive with color. In the fall the begonias were dug, dried, and stored. The fuchsias were taken from the kegs, root pruned and replanted, then stored in a cold greenhouse and left until the following March when they were given some artificial heat and fertilized and soon ready for a new year. These fuchsias were all trees as fuchsias in the mud happen to be a pet peeve. In the early spring or rather late winter, the primroses were replanted on the terrace and heavily fertilized and the cycle was complete. For nine months of the year that strip was a picture.

A lot of work? No, it was fun, but even if it is work the result is worth the effort.

But that garden is gone and a new one has to be built in a new location on the ocean front with much more sun and where the wind is a determining factor. The first work was an eight-foot fence to block the wind and keep out the deer. The next was the erection of a polyethylene greenhouse twelve by fourteen which is a must and can be built at a cost of $45 and up. Then about one-third of the garden area was partitioned off and separated from the rest by a hedge of raspberries. Last year this place was filled with perennials and biennials such as Sweet William, both Newport pink and the mixed dwarf, Canterbury bells and yellow daisies.

On the south side, shaded by a neighboring house and the high fence, the primrose-begonia-fuchsia cycle is already running its course. Beyond this, to the east, is a low-growing fig tree, sunny in the spring before the late-coming leaves appear and shaded by the large leaves in the summer and fall. Under the tree, in a circle of ten feet diameter, was planted a bed of daffodils. This spring the circle of gold under the brown-green spreading limbs of the tree was a picture. But this splash of gold is short lived and the leaves must not be disturbed. So, as the blooms began to fade, a planting of some twenty impatiens, or busy-izzy, was put in between the daffodil stalks. Some fifty of these were raised in the greenhouse in the springtime this was a 12-inch border of gold daffodils and blue scilla. Now dying and dead leaves of these bulbs are buried beneath pansy border.
from one of a pleasing color and kept there until early spring. As there is room for only about thirty, we are quite popular with the neighbors and not so popular with the garden shop. In the rear, to give height and a quick burst of color, a planting of yellow calendulas was used. So this area is doing double duty and will continue to be a bright spot for all the year. It has always been a mystery to some of us that the professionals who make their living on begonias and primroses and daffodils have not pushed and promoted this double duty idea. They certainly would get gardeners to give more garden room to their specialty.

Now about the Canterbury bells. They are a biennial that must be grown a year in advance and give a show from May through June. In this short blooming time they earn their way with a breathtaking burst of pink that cannot be reproduced by any other flower. Some gardeners try to keep the dead flowers picked off and get a second blooming. But this second blooming is an anti-climax not worth the trouble. By the Fourth of July you have been paid in full. So pull them and to the compost heap. Here, in early Spring, the bells are just showing color, and by Decoration Day are an eyestopper. In the humid greenhouse, where the temperature goes over ninety degrees every sunny day, are five dozen tall salvia in gallon cans that are just loving the sheltered hot spot. By the Fourth they are two to three feet and topped with a blaze of red. Then they will be buried, can and all, where the Canterbury bells flourished the day before.

Do you have a border of daffodils and scilla that was a picture a month ago and now is a tangled, unsightly mess because the leaves are taboo until dry? We do, but the leaves are not unsightly because they are buried under a wealth of yellow pansies. Last fall we planted—late because we did not want them to bloom before May—

a package of Clarke's "Pay Dirt." We picked this one because it is a rapid rank grower and produces this wealth of four-inch pure gold flowers that will keep them blooming until frost if the dead blooms are kept picked. In front of this is a border of Crystal Palace lobelia. The pansies were planted between the bulbs when they were well above ground, but had not begun to show buds. The lobelia was planted some time later but it had been grown in the greenhouse and hardened off in a cold frame.

Double duty makes this border a patch of beauty from March till frost. Sometimes in this scheme the most unexpected is the most successful. In this new garden there is a strip along the east side of the garage and bordering the path leading to the house. Last year this patch was left idle because we just had not got to it yet. But, because it is the hot spot in the morning, we decided to fill it this year with Coleus and planted a packet of seed in the early spring, transplanting the small plants to gallon cans. It was our idea to leave them in the greenhouse until June and leave the strip till then. However, last summer we found an interesting and prettily marked Heartsease growing in the gravel driveway of a neighbor. We planted it in this strip because it was handy. This spring there were at least forty growing up and down this narrow patch which had been fertilized heavily early in the previous summer in anticipation of the Coleus crop. The many inches of compost was made mostly from kelp picked up on the beach and these little pansy-like flowers just ate it up so we decided to give them a background. In the neighbor's vegetable garden were hundreds of self-sown Meadow Glow. We planted this amongst the Heartsease and then worked about two inches of "Blue Whale" in between all the plants. Nothing we have ever done has put on such a show or caused as much comment. From now on a spring show of Meadow Glow and Heartsease is a must for that strip. When the flowers begin to fade we transplant half a dozen of each, well spaced in the spare garden, and next spring we will have plenty of plants to repeat. In the meantime the Coleus in the greenhouse grows on and by the time we need them, planting them, cans and all, is a must. That border cost nothing in money and less than an hour of work but you cannot always hit the jack pot.

And so it goes. There is something that can precede or follow your favorite flower if you are prepared in advance and have a spare spot where they can wait. There is a price to pay. Double duty means double food. We work a good three inches of compost and a liberal sprinkling of commercial fertilizer into the top three inches of the soil where possible in the winter and fall. Of course we never dig deeply and waste our substance. Then after planting the small plants we work a good two inches of "Blue Whale" around the plants and let the spring rains do their duty of making it available to the roots. After that, a liquid fertilizer is used once a week. We recommend the fish product known as "Ortho-Gro" to those who have not made a study of these fertilizers. It can be used with safety by anyone while some of the others can bring startling results in the hands of an expert but are killers unless understood.

Editor's Note:
Attention of members is called to the mention made by Mr. Bells to products advertised in pages of the Quarterly: to products from The Claraxes (Page 156), to Ortho-Gro (Back Cover), and to Blue Whale (Back Cover of Summer Quarterly). The Editors would like to call attention to the fact that it is only through advertising pages that the mounting costs of production can be met, and to urge members and friends to patronize advertisers and to let the advertisers know that it was through the pages of the Quarterly that their attention was called to that product.
Primroses Offer Endless Charm

Interesting Story From West Virginia

By MARTHA PRATT HAISLIP

A few years ago I bought from an Oregon primula specialist a collection of hardy primrose species to test their adaptability to the typical eastern weather. The results were interesting but not always satisfactory. In my West Virginia garden I found the most dependable types to be the English primroses such as polyantha, acaulis, some juliana and their hybrids. The blooms of these are lovely in color and spectacular in size; the plants are sturdy and impervious to weather conditions. Many of the tender species such as the alpine, Chinese and Asiatic types are difficult and often impossible for me to grow; I cannot provide the moist and cool atmosphere of their habitat.

However, the polyantha perform unfailingly. From early April my planting of polyantha provides a riot of color for several weeks. The new varieties grow on the wood's edge under conditions to their liking. The soil is rich in humus, the ground sloping enough to assure good drainage. Deciduous shade trees give protection from the hot summer sun. The location is close to a water supply so that the plants may be watered frequently through the summer.

This planting contains vermillion, scarlet and other Indian Red; pastels of pink, peach and yellow; Grand Canyon shades of bronze, copper and tangerine, and spice and coffee shades. There are also yellow, purple, cerise and fuchsia and many specimens of giant Winter White. Recommended for special effects are the Marine Blue, the Cowichan strain of rich dark colors and the Kwan Yin strain of Chinese red, cherry and so forth. These primroses really do attain the advertised "silver dollar sized" blooms.

Not so spectacular, but notable none the less, is a long perennial border's edging of P. vulgaris, the original English "eyeless" yellow primrose. These cheerful flowers are charming in combination with early-flowering dwarf iris of deep blue and purple. Cherished, too, is my collection of old-fashioned polyantha types. Many of these are from old or abandoned gardens. I have them in a tiny garden setting at the foot of a tall tree. Included are jack-in-the-green, hose-in-hose and many miniature-flowered, sparkling red primroses. All of these old types are small flowered, yet each has its own distinctive charm.

Acaulis grows well for me. While acaulic means without stems, the flowers of this species—and especially the new sorts—are produced on stems long enough for cutting. Originally these English primroses were in shades of yellow and deep purple-blue. The latter inspired G. F. Wilson, a hybridizer of Wisley, England, to experiment and finally to produce the first true blue primrose. Further experiments by him and by American growers have resulted in a strain of American blues which contains this color in a range from sky blue to sapphire. In addition, there are varieties that bear fuchsia, apricot, pink and rose-colored blooms. Harbinger, an immense white, is especially lovely.

The Asiatic candelabrums also prosper in my garden. They are spectacular from late April through May. Many plants bear five superimposed whirled blooms that appear consecutively on two and one-half to three-foot stalks. P. japonica, with pink and red frilled flowers, seems especially rugged since it survives where such Chinese sorts as P. cockburniana and P. aurantiaca do not. I have lost some plants because of my failure to divide them after flowering, when their roots disappear and new ones are formed. These primulas are herbaceous and die down in fall to reappear in spring.

The juliana plants bloom in low (three to four inch) cushions of color almost before winter passes. This species multiplies rapidly. It is excellent for making masses of color and for edgings. Among the varieties I like are Kay, a true blue; Lavender Cloud; Snow Maiden; Nettie Gale, with an exquisitely scalloped shell pink flower, and P. juliae, the ancestor of this species. Dainty Maid, with yellow flowers, is one of the new stalked forms of juliana. Blooms are borne on stems that rise from basal leaves. Noteworthy in this class are Lollipops, red and white striped; Lady Greer, ivory, and Klinlough Beauty, rose pink.

Auriculas grow fairly well in my garden. These alpines are characteristically rock garden plants. Their requirements must be met, if they are to thrive. Essentials are good drainage and rich soil mixed with rock chips and compost or well-rotted manure, plus plenty of water in the summer. These primroses bloom in April and sometimes in the fall. Their silvery leaves and fragrant, velvety-textured flowers in red, blue, yellow, brown, purple and pastel shades make them worth almost any effort to bring to perfection.

Primulas are simple to grow from divisions or seedlings. The former, delivered after August 1, have heavy root systems and will flower the following spring. The latter is comprised of small plants that quickly form sturdy stock. Seedlings are planted from April to early October; plants from March to October.

Primroses are also easy to grow from seed. Fresh seed, ready for distribution in July, is planted (in the eastern states) from October through December. It must freeze in the seedbed over the winter.

Most primulas like a heavy mulch to keep the roots cool in summer and prevent root-heaving in winter. In very early spring, additional feeding will invigorate the plants. The Polyantha and Acaulis types usually need dividing every two or three years; Auriculas and Julianas need it less often. Candelabrums should be divided every other year. All primulas are best divided right after they finish flowering. (Condensed from New York Times, May 5, 1957)
A tiny white label marked "Primula rosea on lutcola" marks the end of a brilliant hybridizing career.

This cross, conceived in the chill, white silence of a hospital ward, was to be the last one Peter Klein ever made. Just home from a long stay in the hospital, Pete busied himself making this new cross. It was luck that this rosea re-bloomed at the proper time for this union with lutcola. It was luck too that made a few other plants tardy in bloom that other crosses could be made. So much to make up for—the doubles hadn’t been worked, and no seed this year.

There were other reasons, too, for this extra concentration of work. It took his mind off the pain, always present, though he never once complained. There was the Candelabra Show coming up, and his plants were to take their share of awards. He was pleased at winning at the Tacoma and Kirkland shows too, but the greatest triumph was winning the Bamford Trophy at the Auricula Show. Cy Happy had carefully chosen and groomed the plants for Pete, for he was still in the hospital, and just came home in time to see the plants before they started their triumphal journey. These things were to be remembered as the need for hospitalization again arose.

Although his spirit never wavered, nor his interest in the plants he loved so well, his body, already weakened, succumbed on July 17, 1957.

Everyone who knew Pete loved him. He was a kind, generous, and sincere man. Kind to everyone in act and in deed, never to say an unkind word about his fellow-man, and quick to forgive those who on occasion hurled verbal barbs. Generous, as occasioned by gifts of countless pinches of choice seedlings to those who showed interest, and sincere in his devotion to the One who inspired him, Whose very hands seemed to guide his own. Sincere also in his devotion to his fellow man. For his first crop of double seed was counted two by two into each of the many packets, so they would be fairly distributed.

How much we shall miss him, and yet each spring we shall see his smile captured in the heart of his creations and, knowing this, we’ll never forget.

### Primroses In Southwestern Ontario

**Our Editor in Southwest Ontario Tells of Growing Primroses in a Tough Region.**

**By Robert Luscher**

In southwestern Ontario, where temperatures can drop from a balmy 40° Fahrenheit to -10° overnight! Freeze, thaw, heave, freeze, thaw, and the result is disastrous. Despite these hazards, my Blues usually do flower again in late fall, retain their full florets under the snow, and unfold their blue buds fully before the frost is out of the ground in early spring, and this means the first part of March! By the first of April, the Blues are a beautiful carpet, with only here and there a green leaf tip peeping through. Polyanthus and acaulis, if grown in a shady corner with a reasonable amount of moisture are a success here in Southwestern Ontario, the "Banana belt". The Primulas between my lilies, however, refuse to show their best. Stemrooting lilies are heavy feeders, wanting moisture, which they grab from the Primulas; the denticulatas, going deep down for water with their long roots, do better with their tall neighbors. It is here in this lily bed, on the north side of the house, where there is a shade of water, the surface dries out during the hot and dry July-August and often mid-September weeks. As said before, the denticulatas can withstand a drought, not so the polyanthus and acaulis.

Here a tiny light green mint makes heavy inroads on these plants, and despite the sprinkler going in the evening to knock down and drown these pests, I have not succeeded fully with the above plants. True, come cooler weather and the fall rains, the sturdier plants recover. So my interest centres with the plants in a larger bed, where little direct sunshine can blast them to parchment. They remain green, harbour no mites.

One winter I mulched with peat moss to prevent heaving. The results were disastrous. The cold, wet spring...
Primroses by the Mill Dam
A Smart Connecticut Gardener Shares His Experiences
By JOSEPH STANLEY ROSENTHAL

My interest in primroses came about accidentally a few years ago when I saw a massed exhibit of them at a Boston Flower Show. Shortly after, in describing their impact on me to a neighbor. I remarked how seldom one sees them growing in the gardens of eastern Connecticut. (They are grown, it is true, by the thousands in the garden of a fancier in Cheshire, who renews them annually, but as a rule one seldom sees them in this part of the country.) At any rate, shortly after, I was presented with a few ratty, overgrown clumps by my neighbor who had gotten them from a friend, with a note wishing me godspeed.

My first efforts to grow primroses were not very rewarding, but the few that survived were just enough of an anodyne to encourage me to go on. Like so many amateurs I went all out before learning how. I soon discovered, after a few setbacks, that it wasn't all beer and skittles, but that in spite of the climate, with a little effort and understanding of their basic needs—light shade, moisture, friable soil, and most important of all, winter protection—they can be made to thrive as luxuriantly here as they do in the milder areas of the Pacific Northwest. And the secret, of course, is the obvious one of simulating conditions of their natural habitat as closely as conditions allow.

The soil of southeastern Connecticut is rally conducive to the cultivation of primroses. The soil is generally poor, except along a few river bottoms, the area having been the terminal moraine of the prehistoric glacial eras which deposited sand, gravel, and boulders from as far away as upper Canada, in enormous quantities. Nearby Long Island, New York, also was formed by just such phenomena.

The climate, too, is full of surprises. While the meteorological maps show the area in Zone VI, Mother Nature apparently ignores the fact and often capriciously pushes it up into Zone III in the winter, and down to Zone VII or VIII in the summer.

I am fortunate in having a shallow brook, widened to a large pond by waters impounded by an old mill dam nearby bounding my property, and it was the flat bank of this brook that I chose, both for esthetic and horticultural reasons, as the location of my primrose bed. Those in less fortunate circumstances need not despair, as the fact of the brook is primarily to provide a moist subsoil. The fluctuations in level varying from overflowing in early Spring, to the height of a mud turtle's garter during the summer droughts, makes automation a dream and does not relieve me from watering as copiously as my brookless colleagues. However, since primroses bloom in the spring when rains are plentiful, it makes location of secondary importance, except perhaps esthetically, for when in full bloom the brookside looks, from the house terrace, as though lined with a Persian carpet.

I started my primrose bed as an area of about twenty-five feet long by six feet wide with an assortment of plants, seedlings, and divisions, and have extended it each year. I have tried many species and succeeded with all. The bed is six inches above the surrounding terrain and was started with the layer of compost and rotted, strawy barnyard fertilizer, and finished off with about two inches of topsoil. When I learned, a couple of years ago about a whale product soil conditioner, I spread a one-inch layer on top which seemed to aid materially in getting better blooms.

This year, as an experiment, I tried foliage feeding just as the first sign of budding appeared, and succeeded in boosting the reniform variety from dollar size to about "a dollar and a quarter." This is worth further investigation, which I propose to do next spring, in the hopes of getting a "two dollar" size. Unfortunately, the high percentage of nitrogen makes for larger foliage too, although likewise for a much more lush and healthier green. For those who want to mix their own ingredients, perhaps this tendency can be controlled.

Winter mulching is the most important step for the successful raising of primroses in this area. They may withstand summer drought with a modicum of watering to keep them from drying out, and bounce back to normal growth in the fall, but they will rarely survive the winter uncovered unless planted in a sheltered spot.

I have found marsh or salt hay the best mulching material as it is wiry and does not pack, is free of weed seeds, allows for aeration and keeps the plants in darkness during their dormant period. But when removed, it should be done gradually, as unexpected spring freezes may cause damage. I have had great success with this mulching method, and have lost few, and what losses I have sustained seem to be from the work of rodents. Our very obliging cats, four of them, assist in this area.

There is one interesting point that may come as a surprise even to some professionals and worth relating. In September, 1955, I had extended the bed and reset primrose plants for a length of about fifty feet. The following month we were visited by one of the severe hurricanes that have been visiting this area of late, creating the brook to rise abnormally high. When the storm subsided I found the primrose bed under two feet of water and was ready to write off an end to what my friends refer to as my "prinrose life." But when the waters receded about thirty-six hours later, the plants were still there, married to the soil, and have lived happily ever since. Could they have survived longer submersion? I do not know.

Again the Seed Exchange!
Your Seed Exchange is your best source not only for Primroses but for very rare companion plants.

BY CHESTER K. STRONG

For the fifth year, that is during the season of 1957-58, I will act as distributor of seeds for the American Primrose Society. This task is sometimes an inconvenience duty, but it is always a pleasure. Contact with gardeners brings a certain brightness to winter days. My thanks go to all who have in the past cooperated, for cooperation certainly creates a better exchange. Mr. Gilman plans to publish the seed list in the January quarterly and contributors should forward seed by December 1st or earlier.

This year seeds of plants which have previously been referred to as those companionable to Primulas are highly acceptable. Seed of Dodecatheon, the Erythroniums, Fritillaria, gentians and trillium are in demand.

Results from run-of-the-garden seed from the highly hybridized acaulis, polyanthus, and auriculas have been so unsuccessful in producing high type plants that these seed are not solicited. Gardeners should make an effort to secure seed of these plants from responsible sources. Numerous advertisers in the Quarterly offer the world's best.

Seed and any correspondence concerning the Exchange should be directed to Chester K. Strong, Box 126, Loveland, Colorado.
Haysom on the Auricula
A Review of "Florists' Auriculas and Gold-Laced Polyanthus."
BY JAMES STUART McLEES

Not long ago I reviewed for readers of the Quarterly the writings on the Auricula of Reverend F. D. Horner which had been retrieved from the pages of a British gardening magazine of eighty years ago by Dr. Frederick Jordan of Cortland, N.Y., and republished in the 1955 Year Book of the National Auricula and Primula Society (Northern Section). Now comes a book, one of the very few on record that is almost entirely devoted to the Auricula, written by the man upon whom has fallen the mantle of the Reverend Horner. As Mr. Horner, in his day, outdid all competitors in producing new varieties of auriculas so now, in our time, Mr. Haysom leaves his contemporaries far behind when it comes to the number and excellence of the varieties he has raised. Mr. Dan Bamford rightly says in his preface to the book that "it is mainly due to his efforts that most of the new varieties are with us today."

We have not learned a great deal about C. G. Haysom's early years but it is probably enough for most Americans to know that for twenty-five years he was associated with G. H. Dalrymple whose Bartley Strain of candelabra primulas grace so many of our gardens. Without doubt Mr. Haysom contributed in no small measure to that magnificent accomplishment. Later, when Mr. Dalrymple took up the collection and growing of auriculas, he placed the production of new varieties in his assistant's hands and, later still, when he retired, he turned over to him the nurseries at Bartley and all the unfinished projects that went with them. Mr. Haysom is an acknowledged authority on the culture and production of auriculas and American raisers will give his advice the respectful attention it deserves. His chapter on general cultivation, however, contains little that is new, but it repeats and re-emphasizes the advice of all modern growers from Horner to the present—sweet, wholesome compost, cleanliness and freedom from aphides, fresh air and no coddling, controlled watering, especially in winter.

By far the most interesting section is the chapter on "Raising New Varieties." Here we see Mr. Haysom at work and learn some of the secrets that have made him such a success in this field. Few of us in America will read this chapter without finding therein some hint on how to improve our own technique. For instance, we are told that the difficulty many have had in getting show varieties to set seed is often due to using as seed parent a flower that is fully developed. Use only the half open pips, says Mr. Haysom, cut away the petals and the stamens above the stigma with a fine pair of scissors, examine the stigma with a hand-lens to make sure that it is sticky and receptive (otherwise wait for twenty-four hours) then fertilize by brushing across the stigma with a ripe and pollen-filled anther from the chosen pollen-parent. Except for the few varieties that are by nature semi-sterile this procedure will usually result in well filled seedpods.

The book is well written and illustrated with a number of excellent photographs and a few indifferently done line-drawings. Unfortunately the photographs are in black and white. For the price asked we might reasonably expect colored illustrations. Black and white, no matter how good, conveys little idea of a variety to the reader who is unfamiliar with it, and this is especially true of the alpines.

For the rest, Mr. Bamford's preface is interesting as also will be his chapter on the gold-laced polyanthus to lovers of such delights. Slater's chapter might well have been eliminated and replaced with additional information derived from Mr. Haysom's personal experience. He has no need to appeal to other authority for support or confirmation.

If fault must be found with the book, American readers will find it in the preoccupation of the author and Mr. Bamford with those that is "old florists" and in their devotion to varieties exhibiting an extremely limited color range. The desire to exclude from competition and, indeed, from all consideration as auriculas all varieties not conforming to their standards has been a characteristic of British auricula societies since the inception of the original one in 1873, and even earlier of the loose associations of growers who got together annually to display their products and to compete for prizes of copper kettles and the like. As time has passed, this tendency has become more and more restrictive until now some desire to exclude from consideration among the edged varieties all those whose body color is not black or some other color so dark in shade as to pass for black. No one will deny that concentration of attention on a limited range of variation has resulted in the production of flowers of superlative beauty but there are limits to the benefits to be derived from such restrictive policies. Any collection restricted to modern edged varieties is now monotonous in the extreme.

One might go so far as to say that, beautiful as they are, he is rash indeed who claims that the "show" varieties encompass all the beauty that is Auricula. American growers, especially the ladies, who direct our thinking in matters of color and beauty, will be loath to subscribe to such a doctrine. They are apt to remember that if the restrictionists of the fourth quarter of the nineteenth century had had their way the newly arriving alpine varieties would never have been admitted to polite auricula society.

By British standards this little book is highly priced at thirty shillings ($4.20 at official exchange rates). Despite the high standing of its author American readers will find its difficult to understand why they are asked to pay $5.95 for it.

EDITOR'S NOTE: Although $5.95 (see ad on page 153) does seem high for a rather thin volume with no color plates, the Editor feels that technical know-how imparted, and considering the source, is well worth the price to any auricula grower. The absence of color plates is evidently an effort to hold the cost down and is commendable but the Editor does feel that in a book sent to America, where so many members are unfamiliar with the beautiful named Show Auriculas, it was unfortunate that color was not used.

Help save time and postage. Send 1958 dues to the Treasurer without waiting to be billed.
Our British Representative

Our Former A.P.S. Treasurer Shares Her Acquaintance With Mr. Lawfield

By DOROTHY B. MARSHALL

Among the English people with whom the Americans in the American Primrose Society have had pleasant association, we must not overlook our British representative, W. Norman Lawfield. Sometimes it is difficult to realize that names are attached to real people. However, through correspondence, Mr. Lawfield has become a very congenial and dear friend to individuals in the States who have found that he is, indeed, a very real person.

Mr. Lawfield's interest and work has always been in horticulture. He studied at Cambridge University Botanic Gardens and at the Kew Royal Botanic Gardens. For a couple of years he gained practical experience in a large nursery, and during the war was busy in growing food crops. Later he worked in the famed Hampton Court Palace Gardens. The past ten years he has found time on the side to lecture at the Richmond Technical School while taking courses there. He is the author of numerous articles and papers mainly connected with horticulture. He is now employed on the "Amateur Gardening" staff, and is trying to get in time for writing a couple of books; one on plant diseases and one a biography of the founder of the British Museum, Sir Hans Sloane.

His interest is not confined to horticulture, as he is much interested in botany, archeology, architecture of the old English parish churches, and definitely in his charming wife and twelve year old son. From his letters it is apparent that during the season not a little of his time goes into acting as judge at garden shows. No wonder he has not gotten around to fulfilling his cherished dream of a small greenhouse of his own to putter in! He is an example of a busy person who always seems to find time to be helpful to others. And most important, any services that he gives are doubly welcome, for they are delivered with such warm friendliness.

Editor's Note:

Since the above was written, Mrs. Marshall reports from a letter received from Mr. Lawfield, "Since my last letter I have completed my book on plant diseases and am now waiting to see the proofs; all being well the book should be out in the spring... With Sloane I seem to have undertaken a life time job, particularly as it is only a spare time hobby." Mr. Lawfield's American friends await with interest receipt of the finished book and, perhaps before too long, the biography of Sir Hans Sloane.

The purpose of this column is more membership participation in the Quarterly. We think that there must be many members with questions they would like to ask, and feel that by participating, if only to the extent of sending in a question, their enjoyment of and benefit from the Quarterly will be increased. Questions will be printed in the Quarterly anonymously and all questions the Editor does not feel competent to answer will be turned over to the Society as a whole for an answer. If enough questions are submitted, this department can become a permanent part of the Quarterly and supply quick answers to many questions not covered in the articles on general culture.

Q. Are Daddy-Longlegs beneficial? What are they after in their favorite haunt, the cold frame?

A. The Daddy-Longlegs are classed with the Lady-Bug as beneficial insects. They should be very welcome in the garden as their favorite food is the Aphid. As to why they haunt the cold frame, our guess would be that, outside of the food they find there, that it is a nice warm place and it seems a good place to call home.

Q. How can I get rid of Red Spider?

A. An effective killer of Red Spider Mite is Malathion 50% (see ad on back cover.) Red Spider mites are unable to thrive except in a situation that is hot and dry. Well-watered plants in the proper amount of shade for the locality are seldom infected.

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Hon. Sec., R. H. Briggs,
Springfield, Haslingden, Rossendale, Lancs., England
Sun-Heated Pits Versus Greenhouses

Each has its advantages; either will provide gardening pleasure during winter months.

BY KATHRYN S. TAYLOR

Although there has been a considerable increase in the number of greenhouse owners in recent years, there are still many potential winter gardeners who are unnecessarily denying themselves the truly thrilling rewards of digging in the soil when the garden outside is deep in snow.

Cost Not Sole Consideration

The conventional type of greenhouse is the dream of most flower lovers who feel that settling for any less ambitious structure would be the result of necessity rather than of choice. However, visitors to amateur greenhouses and sun-heated pits have been surprised to find that some winter gardeners have a preference for the pit even though from the financial angle they could have much more pretentious greenhouses if they had so desired.

Actually, the available time to spend on a winter garden is equally as important as the cost and this fact was fully appreciated by these pit owners with growing families and many outside obligations.

Some pit owners have practically turned their pits into greenhouses by putting in heaters with thermostatic control, but by so doing they have added to the amount of attention that must be given the plants because of the increased warmth. The main advantage of the pit should be that it produces, with a minimum of effort, a constant supply of flowering plants that can be moved into the plant win-

Rolled up at the ridge of this sun-heated pit is a heavy pad which is lowered over the glass before the sun goes down.

dow of the house for fuller enjoyment or be left in the pit to give a much longer blooming period because of the cooler environment.

It is best to understand at the outset what a sun-heated pit can be expected to produce in contrast to a greenhouse of similar size and proportions.

Sun Heated Pits

Construction. A sun-heated pit is a structure partly below ground facing due south with glass on that side only. The dirt floor is about three feet below ground and the excavation is lined with a wall of cement or building blocks. All parts above ground are insulated. Adequate drainage is needed in heavy soils. The glass on the south side should be at a slant of 45° to allow for maximum benefit from the sun's rays in winter. Heavy pads are drawn over the glass before the sun goes down or are left in place during cloudy weather.

As originally planned the north, shingled roof of my pit sloped at the same angle as the south side. However, a much less steep angle is recommended for the north side, especially if the pit is dug into a side hill. With this broader angle, much more head room inside is allowed for large plants of azalea, camellia and the like.

The management of the pit is so simple that it can be left to shift for itself over a week-end if necessary; no greenhouses could ever be so handled. Practically no spraying is required and the plants are watered only when absolutely necessary.

Fresh air must be admitted whenever possible. Otherwise, the air may get musty and mildew may form on susceptible plants. The pit should be ventilated at both ends on every sunny day no matter how cold the weather and also on cloudy days if the temperature is above freezing. The door and ventilator openings should be adjustable from the width of a crack to fully open. This can easily be done with hooks of different lengths. In an exposed place, a muslin screen placed over an opening would prevent too great a draught. A ventilator to draw out damp air, of the type used in kitchens, might be a helpful accessory although an intelligently handled pit should not need one.

The plants are growing under almost outdoor conditions and therefore they do not make the leggy growth seen in some amateur greenhouses.

Hardy primroses (foreground) and tender fairy primroses (Primula malacoides) growing in the author's sun-heated pit.
Woody Plants. There is a most interesting opportunity for experiment in hunting out suitable plant material for trial in the pit, particularly among woody genera. Two broad-leaved evergreens that flourish in the cool air are species of camellia and winter daphne (Daphne odora) which is intensely fragrant. Varieties of Camellia sasanqua, a species with rather small leaves and somewhat double or single flowers, some much like pale pink wild roses, start to flower in early fall. These are followed by the common camellias (C. japonica), of which it is best to use only early and mid-season varieties.

The tender species of holly with very shiny, rich, green leaves of different shapes and sizes are unusually attractive. A small specimen of holly in fruit is a splendid subject for Christmas decoration in the house. The winter gardener should scour the plant catalogs from warmer climates to find genera that normally blossom during our winter season. Two examples are pink Australian-fuchsia (Correa pulchella) and Geraldton wax-flower (Chamaeleucom ciliatum).

Among herbaceous plants the primroses take the lead. The fairy primrose (Primula malacoides) is especially reliable and always flowers during the winter. The plants blossom much sooner if taken into the house but the room must not be hot. The hardy primroses Primula acaulis and polyanthum are also sure to do well. A collection limited to shades of blue and yellow is a beautiful sight.

Winter-flowering forget-me-nots (Myosotis sylvatica) really flower in the winter; other favorites are violets, sweet peas (Lathyrus odoratus), wall-flowers (Cheiranthus cheiri), stocks (Mathiola incana) and pansies (Viola tricolor var. hortensis). All such plants must be brought nearly to the flowering stage before cold weather sets in.

Storage. One must look upon the pit as holding a bit of mild southern winter captive within its walls. Perennials of doubtful hardiness can be lifted before freezing weather and stored in a dry corner of the pit in a flat. Pots of zephyr-lilies (Zephyranthes) and similar southern bulbs can be set on their sides beneath the bench for the winter. The pit is too cold for the storage of tropical bulbous plants such as achimenes and gloxinia which need the warmth of a greenhouse.

The average night temperature of the pit is 45 °F., which provides ideal conditions for the stratification of seeds of alpines, wild flowers and various trees and shrubs.

Seeds of any annuals and vegetables wanted very early for the outside garden can be germinated in the house under a tent of polyethylene and then be transferred to the pit to be held back until the weather is warm enough to plant outdoors.

Advantages of Heated Greenhouses

The gardener who wants a constant supply of cut flowers and who has sufficient time to spend in raising them would certainly prefer a conventional greenhouse. Attention to watering, spraying and feeding becomes increasingly important in direct proportion to the raising of the temperature at which the house is run and to the amount of sunlight available.

Plants can be more crowded in a house run at 50 °F. night temperature than at 60 °F. although any crowding of plants should be discouraged. By having the benches at different levels and by judicious use of shelves and hanging baskets an incredible number of potted plants can be grown in a cool greenhouse with much success.

It is interesting to find what a difference it can make to certain plants to be raised close to the glass instead of remaining on the bench; also, to see how much more quickly a potted plant set on an inverted pot dries out than one just set on the bench. If the amateur grows one main crop, such as snapdragons, the plants must be similarly placed with light and air on all sides.

During December and January the amount of color in the greenhouse can definitely rival that in the pit but as the sun climbs higher there will be much less difference.

Flowers suited to greenhouse culture are of too great variety to enumerate here but, just as in the pit, only those enjoying similar conditions should be grown together.

(Condensed from Horticulture, October, 1953. Printed with permission of the author who is President of the New England Wild Flower Preservation Society.)

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AMERICAN PRIMROSE SOCIETY
Seasonal Notes From Barnhaven

By Florence Levy

Last April a well-informed member from Pennsylvania asked me to use one of these page advertisements to explain size and form differences among the Miniature primroses. To the compliment of having the page noticed and participated in is added the convenience of not having to think of a topic. In this way, too, if the page is uninteresting some might think it the subject and not the presentation, so if anyone has one of these handy loophole questions, by all means send it to me.

Here are the questions, the answers to which must be in capsule form to fit the space although they warrant a full chapter. "Please explain the differences in Miniatures, Cinderellas, stalked Julias. I look at some of mine and try to decide what they are. Rather large leaves with claret stalked blooms, not Polyanthus, could they be Cinderellas? Are all the Miniatures really miniature, that is to say very small leaves with small flowers close upon them? Things called hybrid Julias come with big flowers and leaves and could be Vulgaris. Should the stalked Julias all have the typical small Julias leaves, etc. If I can't be sure I'm sure others find it a bit confusing."

In the first place it is necessary to understand that loose terminology is at once the affliction and deliverance of the Primula family. On one hand it makes for confusion and on the other it saves the genus from botanical mustiness serving a popular end. Very loosely, then, "Miniatures" is the overall term designating those hybrids with small or large amounts of P. Juliae blood in their veins.

In the second place it is necessary to understand that the species within each section of the Primula family are closely related, and in flower families this means that everyone is highly marigiae-minded, producing children of mixed blood which are usually intermediate between the parents. No more beautiful and varied children exist in the flower world than those produced —by plan and without plan—by members of the Vernales Section. The giant Polyanthus are children of the Oxlip, Cowslip, and Primrose all native of the British Isles (and predominantly shades of their hybrids), and the highly-colored Primroses of the Mediterranean countries. The Acaulis are offspring of the British and Mediterranean Primroses. The Miniatures are children of all of these and the exceedingly dwarf, magenta-colored P. Juliae of the Caucasus Mountains.

Generally speaking, form, color, and size resulting from these unions with P. Juliae are mostly unpredictable. However, the influence of P. Juliae counted upon to reduce either the size of the plant, foliage, or flowers, or all three, and for this reason "Miniatures" is the rug under which all are swept. But the degree of reduction cannot be predicted for the same pod of seed in one of these crosses can produce plants more dwarf than the smallest parent; plants as small as this parent; plants intermediate between the small and large parent, and plants like the large parent in some aspect. And herein lies the difficulty of fitting them into standard rules, to decide just when a stalked Juliana ceases to be a stalked Juliana and becomes a Miniature Polyanthus. Or at what point of size a cushion Juliana is too large for such and should be classified as a Cinderella. To complicate matters further, the foliage—which often decides into which category they are to be tossed—is usually small on all these primroses with Juliae blood at blooming time in the spring, but becomes increasingly large as spring and summer advances. The foliage of P. Juliae always remains small, but even in its own small way develops from a leaf about little fingernail size in early spring to that of thumbnail area, doubled, before it somehow mysteriously disappears in the summer.

Briefly, here are the rules which have, so far, aided in the classification of an almost unclassifiable group of hybrid plants. Cushion Julias (first generation hybrids between P. Juliae and usually Acaulis, English or Mediterranean Primroses, or subsequent generations among their hybrids) are usually Columnarias. Cinderellas (i.e., hybrid between P. Juliae and Cushion Julias) are usually Columnarias, though they may be Cinderellas. The former are usually columnaria-like in habit, the latter more cushion-like. While we can usually tell at a glance in what category a hybrid Juliana belongs, a great many different ones produce flowers the same shape and size, and often the same color, or resemble each other so closely as to be confusatory. The Miniatures, or those Julias which now would be classified as Cinderellas (if unstalked) or Miniature Polyanthus (if stalked), are of the same parentage as stalked Julias, but intermediate in size—larger in all parts than the stalked Juliana and smaller than the giant Polyanthus. Sometimes originators in the past named and released plants as Julias which now would be classified as Cinderellas (if unstalked) or Miniature Polyanthus (if stalked). Since these last two classifications did not exist at that time to take care of the not-so-miniature Miniatures, and since a plant must be grown and distributed under its original name, the older and newer named varieties of Julias do not always agree in the matter of size. In fact, I have come to the conclusion that the more I think about this subject, clear enough to me, the more cloudy it may be getting for you and urge again more topics for a fresh start."

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PRIMROSES
IN SOUTHWESTERN ONTARIO
(Continued from Page 137)

weather does not give the soil surface a chance to dry. Therefore all my plants died with neck rot. And this in raised beds with perfect drainage. I have used cedar and pine branches stuck between the plants in a slant to catch the snow—good results, also. No matter where we attempt to grow polyanthus, acaulis, or any other hardy Primulas, be it here in Ontario, or further East, South, West, or North, they all do best in filtered sunlight, moisture, and good drainage. It has been said the auriculas are more tolerant to exposure. Yes, in the higher altitudes in the Alps, where the snow water seeps down the cliffs, the nights are cool, cold indeed, and the plants are shrouded in mist, there I have seen P. auricula in southerly exposure in full sunshine, feeling happy. Here? It does not tolerate more open situations, becomes very flabby during the hot noon and afternoon hours. However, in the half shade of trees or tall shrubs, no wilting is noticeable, and the plants retain their compactness. My chief interest now is with the alpine and show auriculas, and with the help of Mr. Haysom's book I must get as near to perfection as one may hope, with only a few seedlings out of the many I grow each year from seed.

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