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On the cover

Splendid, stately P. japonica reigns over the garden of John and Clara Skupen of Tacoma during May. The Skupens hauled many loads of rock and other materials to create a large garden area in what was once a mill site. If you don't have their kind of natural spring-fed setting, an article in this issue will offer you an alternative plan for creative gardening. Try building a rock garden instead.

Auriculas: ageless fascination

Growing auriculas has fascinated generations of gardeners. Reproduction of lovely old hand-colored steel engravings from the collection of APS member Gary Eichhorn of Missoula, Mont., reminds us that this florists' flower has challenged growers always to seek perfection in color and form. APS is grateful to Mr. Eichhorn for sharing these illustrations and for offering to assist in the production of a color issue.

A glimpse into the modern world of round robin writers proves that auriculas are just as interesting to grow as they were in the days of the old herbal publishers. Former APS president Thelma Nelson has loaned us a file of round robin letters from the 1970s. The following letter, written by noted hybridizer Ralph Balcom of Seattle, offers insight into the growing of these interesting plants.

Mr. Balcom has retired from gardening because of health problems, but his suggestions coupled with the illustrations of old and modern plants should give a boost to those who have felt timid about trying to grow auriculas.

Dear Round Robin Members,

Just finished reading the letters from you all and enjoyed them very much. Since I am to become another member of the Round Robin, I had first better give you a thumb-nail sketch of my experience as a primula enthusiast which is considerable.

It was back in 1942 that I first became interested in primroses and really started raising them. I jumped into the fun of growing them with all four feet and by 1947 had accumulated about 30 thousand plants (believe it or not). They included every kind of primrose I could obtain from all over the world.

In the spring of that year I set up a sales yard in Lake City, a suburb business section of Seattle, and sold nothing but primroses. It was surprisingly successful, and my wife and I were really busy for over two months at it. However, due to a change in my work, I then moved into the city of Seattle proper and simmered down to only what plants I could grow on a small city lot.
Double auricula created during the last part of Ralph Balcom's hybridizing career

Light center alpine auricula grown from Douglas seed
Now, we have moved to a large double lot in the city of Seattle where I have a 12' x 24' green house and rich loamy black soil and room to grow several hundreds of plants mostly in beds. I have retired and this is now my hobby, doing nothing but experiment in the hybridizing of primroses, mostly the auriculas, especially the double sorts.

I have many projects going, many of them taking many years to complete. Each year for several years, I have made on the average of about one hundred separate crosses, the majority of them between double auricula plants. Not all of them do set seed, but I counted 90 the other day, different kinds of seed that I have now planted in my greenhouse.

It is a wonderful hobby for a retired man for it can be done right at home. What fun it is each spring to go out each day and look at the new ones that are blooming and gloat over some new kind that no one else in the world has ever seen. I keep volumes of records and can tell you the parents and grandparents and many other relatives of most of my plants. And my hobby does not cost me any money but actually pays for itself.

Mrs. Nelson has asked me to answer some of your questions on raising primroses, especially the auricula kinds and now I will do the best I can but do not claim to be the final authority and certainly do not know it all. My knowledge, of course, is limited to my experiences here in the Pacific Northwest where it is rather mild and quite wet, especially in the winter time. It also never gets very hot here and so we who live here do not have the troubles of many of you who face the real hot dry summers and the icy cold winters.

Now for some answers to your questions:

To Berg Madison in Illinois who is having trouble growing auriculas from seed. I think that most failures in germinating primula seed are due to either of two things. One is allowing the seed to dry out after it is planted, even if but an hour or two, and the other is because the surrounding temperature is kept too warm for primrose seed germination.

It likes a temperature of at least ten degrees lower than most other kinds of plant seed. The optimum temperature for germinating it is just under 60° and it seems to help if it gets cooler, even down in the 40's, especially at night.

The type of soil mix one uses to start the seed isn't too important, for seed will germinate between two pieces of wet blotter if given the proper temperature. I have often done it that way for tough-to-germinate seed. However, I use a mix consisting of about a third each of good garden soil, leaf mold or sphagnum peat moss and course river sand. I often use number one chick grit in place of sand if good coarse sand is not available. Mix these three together and sift through a quarter inch screen. This works well also as a potting mix.

I have successfully used many kinds of containers to hold this mix but it should be rather shallow and must have small drainage holes in the bottom. I have used cottage cheese cartons, tuna fish tins and the like for small amounts and regular flats such as those used in greenhouses for large amounts. However, since I have had trouble sometimes, mostly because of neglect, and have allowed my seed to dry out after planting (I just plant my seed on top of the soil without covering it) I now germinate most of my primula seed on BRICKS, believe it or not.

I have over forty such bricks with dirt on top and planted with primrose seed now sitting in pans of water in my green house. In most of them the little primrose plants are already up and growing. The brick idea is quite popular here in this area. It is the lazy man's way of keeping them always watered with no danger of the seed ever drying out.

I just take an ordinary brick, never a glazed one, and build sides and ends to it out of apple box material. This extends about an inch and a quarter above the top of the brick to hold the soil mix. The seed is then sowed evenly and pressed a bit into the soil after which I place a glass or plastic over it to keep the seed moist when it needs it and turn moistens the soil and keeps it always turn moistens the brick which in turn moistens the soil and keeps it always moist but never too soggy. All one needs to do to water is to pour water once in a while into the pan so that it always touches the brick. It is a fool-proof way of watering and the brick is easily constructed.

Here is a diagram of the constructed brick. It is very easily made.

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To Mrs. Schmitz about the time it takes the garden auriculas to flower from seed. I like to plant my auriculas about the middle of February and then by growing the seedling plants well without any check, they will bloom the following spring. Now and then there will be a slow plant that won't bloom until the following year but not often.

To Mrs. Doonan about growing auriculas in sun and rock chips. I don't consider the rock chips very important and don't use them. Auriculas do prefer a bit of shade but it should not be too heavy a shade. Here in Seattle they grow well right out in the open as we do not have the hot sun they do in many other parts of the country. In places where the summer is hot and dry, they would need more shade — also plenty of water in the summertime. They must never be allowed to dry out even here in the Pacific North east at that time of year. But they need good drainage, especially here in our area, and do not like to stand with their feet in the water.
Many primrose growers are avid rock gardeners. Many more would like to be—if they knew where to start. A Canadian government publication offers some basic suggestions in a clear, concise presentation. This information is from publication 1243, "The Rock Garden," published with permission from the Minister of Supply and Services, Canada.

Before planning a rock garden, make sure that your property offers a suitable setting. Be prepared to give much thought, a lot of money and hard work to the construction. Study your plant material, remembering that the purpose of the rocks is to provide proper conditions for a definite type of plant in which you are keenly interested. Make certain, too, that you will have enough time to give your garden the constant attention it will need.

Setting
On the average city lot the rock garden should be placed at the back of the property, adjoining the lawn but away from formal planting. It is well to separate it from the lawn by a small hedge or grouping of dwarf shrubs. It should appear to be a natural formation.

The site should be sunny, or at least not too shaded. A slope facing north is ideal, especially if the incline is such that the sun in winter does not directly hit the soil and there will be no thawing in very early spring.

Soil
Soil for the pockets where the plants will be set should be specially prepared. Use a mixture of two parts good loam, one part sand and small amounts of peat and peastone or limestone chips. This soil, however, will not be used until the bulk of the garden has been built.

Stones
Get your stones from the neighboring countryside. Do not use boulders, but rather stones irregularly shaped and having one surface at least a foot across. Get a few large ones for special placements, a few flat ones for steps and as many well-weathered ones as you can find.

Construction
First dig away the existing topsoil and remove any roots of weeds or grasses. This soil will be used in backfilling. Start building with the big rocks and pack soil well around each.

Continue the row, varying the size and shape of the stones and also breaking up the line so that the garden does not appear to be made up of a number of terraces. All rows, however, need not be continuous. Leave a few gaps here and there. Set the rocks so that the main surface slopes inward and the longer edge is exposed at the front.

Usually leave about a third of the rock exposed. As you continue with other irregular lines, bear in mind the needs of the plants for spots that will provide not only a good
P. marginata develops shrubby trunks as it matures

root hold but also proper drainage.

Remember that every part of the garden should be easily accessible. Main walks should be provided as you continue construction. These walks may be surfaced with sand, peat or pine needles and later covered with thyme.

For the first part of the backfill use the soil you dug out. On top of this place 6-8 inches (15-20 cm) of the prepared mixture. A final layer of sand, peat or peastone may then be added.

Planting

Some plants are best set out in the rock garden during construction. Crevice plantings must be placed at time of construction. Spread their roots on a rock, cover them with soil and then place a rock on top of them. Most other plants are put into place after the rock garden has settled.

Seeds of many rock plants, especially those in tiny crevices, may be planted in early spring. However, be careful not to sow seeds of weedy types as they will soon spread to the rest of the garden and become troublesome.

Types of plants

Various types of rock garden plants are best classified according to their habit of growth.

1. Tufted plants, which form small mounds or tufts of foliage, grow best in crevices and small pockets, especially at the higher levels. (P. auricula, P. modesta, P. amoena, P. pubescens hybrids)

2. Upright plants about 1 foot high (30 cm) rise above pendulous forms. These give height to plantings. (P. cockburniana, P. denticulata, P. capitata, P. polynema, P. yarriongensis)

3. Drooping plants are most effective when they hang down over the face of a rock. These plants, which give foliage bulk to a rock garden, should be planted on steep slopes on the top. In flat areas they soon crowd out the small and less vigorous plants. (P. marginata, P. forrestii)

4. Creeping plants form compact cushions close to the soil and rocks, rooting at stem joints and covering the soil and rocks completely. Such plants are also useful for carpeting walks. (P. juliae, P. tyroliensis, P. minima hybrids, P. clarkei in moist areas)

Maintenance

In early spring remove dead tops, dead plants and winter covering. As soon as possible replace plants that have dried and set out new ones. With the first flowers come the first weeds. Dig these out, being sure to get all of the plant.

In June gather any seeds that have formed, and soon afterward divide any plants that have grown too rampant. In the fall clean up once more and provide tender plants with a mulch of straw or peat. When the ground has frozen hard, spread some evergreen branches over it. These will help to collect snow and so provide further winter protection.

"The Rock Garden" lists plants that are easy to grow, plants with evergreen foliage, plants for late summer bloom, plants for walks and stepping stones, plants less easy to grow, dwarf shrubs, bulbs for the rock garden and plants that are hard to grow. Gardeners in your own area could offer suggestions about growing rock garden plants that will survive in your climate and serve as companion plants to your primulas.

P. juliae produces creeping, rooting stems
President’s message

It is with pleasure I announce the conversion from affiliated societies to American Primrose Society chapter status of Valley-Hi Primrose Club of Beaverton, Ore., to Valley-Hi Chapter of APS and the Oregon Primrose Society of Milwaukie, Ore., to the Oregon Chapter of APS. I am sure this conversion will prove beneficial to these chapters and the APS.

Because of continuing inflation worldwide, the board of directors at the last meeting decided on an increased dues schedule for 1982. But directors also agreed to allow the present price for three years’ dues in advance to be available until Sept. 15, 1981. We hope many of you can take advantage of this offer and use it as a selling point for new members.

I have received a few letters from members with some very good suggestions and ideas to widen the interest and appeal of APS. After all, APS is your society. Each one of you is as important as any other member. Your input and enthusiasm are needed to keep this a viable society that benefits you, the important member. I am just one person with one set of ideas and needs. Mine may not be at all representative of the general membership. My job is to coordinate and help the board direct the activities of the society. The important ingredient of a successful organization is the active participation of each member in his or her local group and community.

I would like to visit every member’s garden or primrose patch — even if it be only one plant in a window box. Because of limits of time and money, this is impossible. But I would appreciate pictures and accounts of your successes or failures — large or small — that could be collected and published in the quarterly.

Herb Dickson

Victoria grower experiments with P. juliae genes

Cute little round leaves and cushions of flowers.
That’s what we see when we look at the juliae. But primrose hybridizers have been ignoring — or have not understood — what an important source of genetic material P. juliae is. It can make a major contribution to the variety of richness of color and to a hardy creeping root pattern.

A general failure of primroses is the tufted habit of growth which allows plants to rot or die during unfavorable weather. Breeding programs using the juliae can create hardier plants.

C. C. Heimburger of Victoria, B.C., has spent a lifetime in plant sciences. He works as a hobby with poppies and the vernales section of primula. This careful scholar brings a scientific approach to the study of our favorite plants. He has kindly shared the results of his experimentation.

by C.C. Heimburger

Two genes are involved in order to have the desirable creeping rootstock. Both must be present.

This statement is based on a cross P. pallasii x Toronto Wanda, made in Toronto in 1971 and the seedlings raised here. The seedlings segregated quite well into a ratio of 1 creeping: 3 tufted.

On the basis of this cross, I assume that the creeping rootstock of Toronto Wanda is conditioned by two dominant complementary genes, each present once, and the tufted rootstock of the P. pallasii used in this cross is based on the corresponding double recessives. This summer I dug up my primula bed and found the following:

Vernales primulas (in my collection) usually have a tufted rootstock.
P. sibthorpii (from Alice Baylor, Vermont) and several julianas have a creeping rootstock.

In P. juliae (from Tacoma) the stem creeps along the surface and roots.
P. sibthorpii reached England in the early 17th century and presumably introduced anthocyanins into garden primulas. What happened to the creeping rootstock? Surely there must still be some genes for this floating around among old primrose varieties, such as double and other weird forms, where vegetative propagation would have favored their retention.

Gene action regarding color

Cowichan red is purple minus the blue gene.

This assumption is based on the paper by Frimmel (Frimmel, P. 1931. Die genetischen Grundlagen fur die Farbenzuchtung der Gartenprimel. Zietschrift fur Pflanzenzuchtung 17(1-2):173-185),
where two kinds of blues are mentioned, one of which behaves as above.

I have since had difficulties to reconcile this with my recent experiences. When the blue part of the petals of a dark blue Juliana (my clone 3-77, ex Barnhaven's new Julianas) is macerated in weak hydrochloric acid, the resulting extract is bright carmine. When this is made alkaline with washing soda, the color returns to the original blue.

This, in my mind, indicates the action of (a) switch gene(s) that change(s) the reaction of the petal cell sap from acid to alkaline and cause(s) a corresponding change(s) in petal color. When I tested some bright colored Julianas for the presence of flavones in the petals, I found a strong reaction, stronger than in ordinary red, blues and yellows. (Outer parts of petals macerated in weak hydrochloric, extract shaken with equal volume of ethyl acetate. The acetate dissolves the flavones and is neutralized with washing soda. The yellow color then indicates the presence of flavones).

The strong flavone reaction may explain the bright reds and blues, but what about the yellows? This question is still open.

Dominant P. vulgaris gene

P. vulgaris has a gene which dominates the creeping rootstock characteristic.

In a cross of a very pale yellow garden acaulis (my clone A2) with Victoria Wanda made in 1975, none of the resulting F1 seedlings had a creeping rootstock. This may be due either to Victoria Wanda differing from Toronto Wanda, or to the clone A2 differing from my P. pallassi in the genetic basis of the creeping rootstock. I believe the second alternative to be the more plausible. The number of genes involved in this reaction still has to be determined.

Creating black with yellow and blue

Black is created by the presence of two dominant yellow and two dominant blue genes.

The idea is taken from Frimmel (I.e.). In a recent chemical test, I used the clone 3-77 mentioned previously and a yellow P. elatior (my population 112) from seeds offered by the American Rock Garden Society in 1979. A mixture of about equal parts of the acid extracts of the two primulas had a dark grape juice color, that of the alkaline extracts was black. When diluted, the black became brown, like India ink.

This only shows the basic reaction, but not the number of genes involved. Since, according to Buxton (I.c.), blue is recessive to red, and yellow is partially dominant, the resulting black is probably composed of a double dosage of both blue and yellow genes. The cross yellow x blue would then yield an acid petal cell sap, having a grape juice color, in the resulting F1 seedlings. Only in the F2 generation would some pure black appear in the alkaline fraction of the population.

P. pallassi not close kin to P. elatior

P. pallassi is not closely related to P. elatior. Any self-respecting P. elatior and its subspecies and varieties have a leaf venation similar to the longitudinal cross-section of a good Christmas tree, i.e. the lateral veins are opposite to each other, and diverge at an angle wider than 90° from the main vein at the base of the leaf; then the vein angles gradually become smaller towards the apex. Such a leaf venation is not found in P. pallassi.

When P. pallassi is crossed with P. elatior, the hybrids are weak and show low pollen and seed fertility. This, to me, indicates that P. pallassi and P. elatior behave as distantly related species.

This is as far as I have progressed in my primula studies. At present it barely scratches the surface. Hopefully more will come.
Kingdon Ward was going up the Orka La (pass) from Assam to Bhutan—"... we camped as usual in a bog. Unless you actually squat like a baboon on a rock it seems you have to camp in a bog in the summer here... the wind blew violently out of Bhutan, whirling clouds and rain from every quarter in turn..."

He went to the summit of the Orka La and looked down on "... seas of primulas which spread over the pastures. The chief contributor... was the chrome yellow P. dickieana... You could tell where the turf oozed a mile away by the blazing yellow flames of this astonishing primula... P. dickieana is apt to adopt colour aliases, violet, mauve and purple... but here it was unvarying yellow. The more the yak trod and browsed over the pasture the more P. dickieana seems to thrive."

Described in 1882
Primula dickieana, which belongs to the Amethystina section, was discovered as long ago as 1848 but not described until 1882. It occurs locally over quite a wide area of the Himalaya, at 4,000-5,000m. This graphic description of a habitat was given by F. Kingdon Ward in the Bulletin of the Alpine Garden Society, 1938, 6,300. The preceding article probably gives more information relevant to cultivation conditions than any other and was quoted with permission.

Kingdon Ward goes on to infer a considerable appetite for nitrogen from the yak dung, since he regarded the pastures in which the primulas were growing as otherwise rather lean soil. He was writing only two months after going up the Orka La so his observations would be very fresh in his mind.
Another chance
So far as I know, P. dickieana was not brought into flowering cultivation for about 11 years, not until Ludlow and Sherriff sent back seed in 1947 and plants by air in 1949 and had them distributed by Sir George Taylor to some of the best British cultivators. The experiences of these experts were tabulated in the Journal of the Scottish Rock Garden Club 1951, No. 8, 102-122 and Sir George Taylor mentioned some of them in the Society's "Pictorial Dictionary of the Cultivated Species of the Genus Primula." Sir George Taylor himself, who was with Ludlow and Sherriff on their 1938 expedition, found P. dickieana in one locality with white, yellow, mauve, violet or purple corollas.

Mr. and Mrs. Renton of Banklyn, Perth, won a Forrest Medal with P. dickieana at the Perth Show in 1950, and Dr. H. Fletcher, in "A Quest of Flowers" (1975) indicates that this plant was grown from the 1947 Ludlow and Sherriff seed collection. Mrs. Crewsdon flowered one of the 1949 plants in a west-facing peat wall, catching most of the rain.

Next account in 1960
Thereafter are no cultivation reports until R. B. Cooke, who had had no success with the 1949 plants, wrote in 1960 in the S.R.G.C. Journal No. 26, 29, "P. dickieana L and S 13285 came through unharmed in its shady bed after being divided in early Spring. Frequent division for this seems to be necessary and a cover over it in Winter to keep it a bit dry."

There were no more introductions until 1975 when the late Len Beer sent back seed from Nepal and Dr. G.F. Smith brought in plants from the same country in 1976. One of the latter flowered in 1977 and was shown at the Southport show, and D.B. Lowe and G.F. Smith gave a detailed description and drawing of the plant in the A.G.S. Bull. 1979, 195, 37.

Points to be noted from this article, from the cultivation point of view, are the rather short root system and the need for a 'relatively moist' root run. The article ends with the report of the production of a few seed. Mr. Lowe has since told me that the parent plant died but the seed was successfully germinated.

Growing Len Beer seed
Our own experience is with the Len Beer seed, which germinated reasonably well in 1976. Seedlings were grown as typical Asiatic primulas, most leafy soil and moderate shade. Casualties among seedlings were high, and it can only have been a remarkable stroke of "beginner's luck" that left me with the only four seedlings in the autumn of 1978.

Of three healthy looking seedlings in one pot one was given to that great expert with Asiatic primulas, Alex Duguid of Edrom. Both it and its two mates promptly died.

The last plant was left outside on the north side of my greenhouse, and it survived the worst U.K. winter for 30 years. When the whole root system must have been frozen solid for quite some time. Up to that time I hadn't delved into the past literature, but then Dr. G.F. Smith told me that P. dickieana grew in boggy places and thereafter I stood the pot in a dish of water.

After 30 years — ignored!
Discovery of the Kingdon Ward article led me to repotting with a good proportion of dung. In 1980 I was rewarded with a flower, pale yellow with a deeper eye. I regret to say that on the show bench, 30 years after the Renton's success, the judges completely ignored it!

My plant did not set seed, but it did make three rosettes. Eventually I plucked up courage and tore one off, so at the time of writing I have two "mature" plants, but neither is making as compact a resting bud as I should like, the rosettes being still rather open (mid-October). Despite the experience of complete hardiness it is hard to resist the temptation to pamper it somewhat over winter.

It is clear that P. dickieana is not one of the easiest primulas to grow; nevertheless means may be found. It is to be hoped that some of the other color forms may be introduced, and a flowering collection of the various colors should be a superb sight.

Don Stead, Esk House, Bishop's Park, Thorntonhall, Glasgow, Scotland G74 5AF, suggests that APS members consider acquiring a copy of "A Quest of Flowers" by Fletcher, an account of the Ludlow and Sherriff expeditions and a good source book on Asiatic primulas. The book is out of print, and publishers' stocks are low, but he can supply it on behalf of the Scottish Rock Garden Society for 9.40 post paid. (If you send U.S. or Canadian dollars of the equivalent price, add $2 for bank dues.) Mr. Stead says the book costs 14.50 now in United States Kingdom shops and will be a collector's item soon.

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Beginning's Luck
—with Tony

What is the reason for breaking primula into sections? I find references to sections vary confusing.

In the first place primula includes well over 500 species. As botanists became familiar with the genus, they began arranging the various species into groups based on important anatomical similarities. Most of this work was done within the last 80 years by Pax, Balfour, Wright Smith and Fletcher. Since 1950 comparatively few changes have been made within the sections, which now number 30.

Each section is assigned a name and number. Because of the closer relationship of the species within a section, most hybrids are the result of cross pollination between two species in the same section. It follows that species of the same section have the same or related chromosome counts. Several of the largest sections have been broken down into subsections. Be aware of this if you are studying the auricula, nivales, farinosae and petiolares sections.

The sections of primula are as follows:

1. Amethystina
2. Auricula
3. Bullatae
4. Candelabra
5. Capitatae
6. Carolinella
7. Cymosa
8. Dryadifolia
9. Erythraea
10. Euphylla
11. Farinosae
12. Floribunda
13. Grandis
14. Malacoides
15. Malvaceae
16. Minutissimae
17. Muscaria
18. Nivales
19. Obconica
20. Parryi
21. Petiolares
22. Pinnatae
23. Pycnodes
24. Reini
25. Rotundifolia
26. Sikkimensis
27. Sinenses
28. Soldanellae
29. Soulouei
30. Vernales

If a primula reference book is pre-1950, it may not agree entirely with the APS Pictorial Dictionary. For example, P. megaseaeifolia may appear in a separate section rather than the vernales section where it now resides.

Remember, botanical knowledge is always subject to change.

Often the sections are referred to only by the bracketed numbers. Keep this list handy.
Collector's items

Hobbyists collect everything—old metal action banks, kewpie dolls, kitchen tools, hand-crafted wooden boxes.

Gardeners collect plants, but many also watch for treasures that capture the history of their favorite garden friends. Gary Eichhorn, a member of the society from Missoula, Montana, has acquired fine old botanical prints from the 1700s and 1800s. Most are copper plate engravings which have been hand colored.

The three color plates reproduced on page 4 are from "Phytophthora Iconographia" by J. W. Weinmann, published 1737-1745. They are copper plate engravings in original hand coloring. These prints also form part of Eichhorn's collection.

P. marginata, silver-edged primula, hand-colored copper engraving from Flora Londinensis by William Curtis, 1792

P. acaulis, double lilac primrose, hand-colored copper engraving from Flora Londinensis by William Curtis, 1793
40 years ago...

Pacific Giant polyanthus causes garden sensation

Forty years ago Vetterle and Reinelt created "ooohs" and "aaaahs" with a sensational polyanthus hybrid—the Pacific Giant strain.

The growers introduced the plants in the gardens of the Golden Gate Exposition on San Francisco's Treasure Island. These sturdy colorful plants created a sensation among gardeners. They still do.

Effort inspired from childhood

Reinelt, a Czechoslovakian immigrant who had loved primroses from his childhood, began to hybridize primroses in California on the large estate where he worked. The owner allowed him to collect plants and seeds from Europe to use as breeding material.

After Reinelt opened a commercial nursery in Capitola, Calif., his primrose breeding began in earnest. He started by growing some 10,000 plants a year. He saved the outstanding plants in the greenhouse for pollinating.

Getting new colors

Through selective breeding processes Reinelt developed new color ranges in the polyanthus. He produced shades of true pinks, and he tackled a program to get a blue polyanthus. He was successful.

Although the plants were an instant success at the exposition, Reinelt had to cut back during the war years. After the war he began to double the planting yearly. In 1953 he grew some 250,000 plants which were sold wholesale all over California. Because he had so many plants, he could be selective about choosing plants for seed production.
One plant produces strain
In 1950 one pink pastel polyanthus showed a pronounced color break. Petals shaded from dark to light rather like an alpine auricula. From this one plant Reinelt developed his pelargonium strain in all colors. Vetterle and Reinelt also specialized in delphiniums and begonias. These and their polyanthus strains are being carried on now by other growers.

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Diary of a Primroser

by Cy Happy

I’ve been watching Mt. Rainier this morning. First it was a silhouette in a lavender sky. Now it is wearing a large hat of clouds indicating a change in the weather. A heavy frost has nipped the precocious flowers on the auriculas and primroses. There is satisfaction in knowing your plants are safely into the time of dormancy. As winter approaches I look forward to those mild, mystical mornings that will follow, when the quality of light and stillness of air bring what the Irish call a “soft morn.” Then our plants begin a new cycle.

Ready for study weekend

Send in your $25 deposit for the Northwest Study Weekend to Hollis Phillips, 7550 39th Ave. NE, Seattle, WA 98115. The date: Feb. 20-22 (Friday evening to Sunday noon). Place: Fort Worden near Port Townsend on Washington’s Olympic Peninsula. The old coast artillery post is charming, and the program covers a wide range of alpine and rockery plants. Getting together with several hundred interested, knowledgeable growers is a great way to start the spring season.

C. C. Heimburger, who shares his knowledge in this issue, gathers the juliana fanciers at the study weekends. One of his admirers, Maedythe Martin, has moved back to Victoria, British Columbia.

The Alpine Garden Club of British Columbia, always an active participant in the study weekend, is the only alpine garden club issuing a monthly bulletin. Among their activities is an exchange of seed and plants with the Japan Alpine and Rock Garden Club. Individual dues are $8, payable Jan. 1, which include a seed exchange.

Some names and addresses
A few suppliers of primula seeds and plants—for those of you who asked:
Natures Garden Nursery, Rt. 1, Box 488, Beaverton, OR 97005. Catalog 50 cents.
Siskiyou Rare Plant Nursery, 2825 Cummings Rd., Medford, OR 97501. Catalog $1.
The Rock Garden, RFD 2, Litchfield, ME 04350. Catalog 50 cents.
Thompson & Morgan, Inc., P.O. Box 100, Farmingdale, NY 07727.
Allan Goodwin, Goodwins Rd. Bagdad So. 7407, Tasmania, Australia.
Gordon Douglas Auriculas, 67 Church Road, Great Bookham, Surrey, England. Seeds only.
Other growers and suppliers are listed in the quarterly. (We all appreciate the advertising support of these fine firms.)
Here's a real challenge!

Dr. David Winstanley, Woodlands, Toot Hill Road, Greensted, Ongar, Essex, England, is urging hybridizers to develop a gold-laced polyanthus with the root characteristics of Primula juliae. If such a group of plants were produced, it would be much easier to keep through the winter. Top quality show plants would be easy to propagate. Their survival over long periods of time would be assured.

Because the project would probably cover many years and many generations of plants, the work should be started by several growers. With careful record keeping and sharing of information, success should come eventually. Crossing gold laced to P. juliae is one way to start. Crossed back to P. juliae in later generations may be necessary. Crossing gold laced to a yellow polyanthus Juliana hybrid with the creeping form of roots might be a quicker breeding program. Time will tell.

Time for new editors

With this issue Rita and I have completed four years as editors. Since editors seldom last more than five years, it is time for new people to step forward. I feel the need for fresh ideas and renewed enthusiasm. Is there someone waiting in the wings?

Speaking of waiting, I just looked at a patch of seedlings—small Caucasian oxlip x Primula juliae—and the first one is showing color. It is soft purple on a poly stem. Wonder how many variations there will be. From my experience if you were to make just one cross using P. juliae pollen, it would be with a cowichan. I know you would be delighted with the results. Or how about a vivid cowichan x Garryard Guinevere?

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American Primrose Society

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Membership

Dues of $7 a year are payable Nov. 15. Membership includes four issues annually of the Quarterly, cultural chart and seed exchange privileges. Three years for $20. Life membership, $100; garden club affiliated societies, $7 a year; library and horticultural societies, $7 a year; second member in family, $1 a year. Overseas members, $7 a year; please send by international money order. Send dues to the treasurer.

Publications

Back issues of the Quarterly are available. Order from the secretary. Manuscripts for publication in the Quarterly are solicited from members and other gardening experts, although there is no payment. Please send articles and photographs to the editor's office. 11617 Gravelly Lake Dr., S.W., Tacoma. Wash. 98409.

Advertising rates per issue: full page, $60; half page, $30; quarter page $15; eighth page and minimum, $10. Submit advertising to the editor.

Seed Exchange

Rose Willingham, chairman, 2248 S. 134th, Seattle, Wash. 98168.

The treasurer respectfully requests the presidents of all affiliated clubs to forward the agreed upon voluntary contribution to the national treasury of $1 a member to him at their earliest convenience.

G. K. Fenderson, APS Treasurer
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