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Quarterly of the American
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Society

VOLUME XXIII

WINTER, 1965

NUMBER 1



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Quarterly of the American Primrose Society

VOLUME XXIII WINTER 1965 NUMBER 1

Notes from Rhone Street	4
President's Message <i>Ralph W. Balcom</i>	5
Primrose Echoes <i>Frances Kinne Roberson</i>	7
Primula Parryi — The Untamed <i>Mary Ann Heacock</i>	10
Auriculas In South Colby <i>Janet M. Round</i>	13
Juliae Hybrids <i>Herbert H. Dickson</i>	15
Notes on Raising Hardy Asiatic Primulas from Seed <i>Alex Duguid</i>	17
Duties of the Show Committees <i>Mrs. William H. Massey</i>	22
Growing Polyanthus Under Fluorescent Lights . . . <i>Mrs. J. G. Mac Dougal</i>	24
Annual Reports	27
Seed Exchange <i>Elmer C. Baldwin</i>	30

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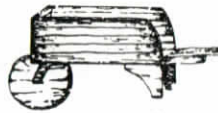
Notes from Rhone Street

Members who would like a copy of Doretta Klaber's book, *Rock Garden Plants*, will be pleased to learn a new edition has been printed by Bonanza Books, 419 Park Avenue, New York 16, New York, and retails for \$1.49.

Mrs. Heacock has asked me to correct the spelling of the German word for Primrose — we left out an "l", which changed the meaning of the word to "bowl" — hardly our intention! And Mr. Langfelder writes: "First of all, Key is not *Schuessel*, but *Schluessel*. Some people call Primroses *Himmelschluessel*, but in fact it is only for the *Primula elatior*. *Primula auricula*, which I have met by the millions in the Alps, is called in Austria *Petergstamm*, translated a "stick of St. Peter." . . . I wonder why more of the beautiful *Primula* of the Alps are not seen more frequently in this country. I have raised from seed, *P. Minima*, my favorite; *P. clusiana*, which is much easier than *P. auricula alpina*, the wild one; *P. hirsuta*, *P. viscosa*, *P. commutata*, and others."

Mr. Langfelder asks an interesting question. How many *Primula* enthusiasts raise and enjoy the lovely contributions from the Alps?

Officers, former editors and other interested members of the Society have been planning to republish the Society Dictionary as funds and time become available. Perhaps it is just as well we have not yet managed to get it done. Additional changes in nomenclature are likely to occur for some time, as the methods of pollen morphology and chromosome counting in the cells of plant tissue serve to identify plant relationships with more certainty than in the past. The studies



by P. Wendelbo maintains familiar names but changes the groupings.

A note from Mr. Lawrence Hochheimer requests we notify the Society of the increase in the American Rock Garden Society dues: \$5.00 for a single membership, \$7.00 for a family, and \$3.50 for overseas.

American Primrose Society dues for 1965 should be sent to Mrs. L. G. Tait before January 15.

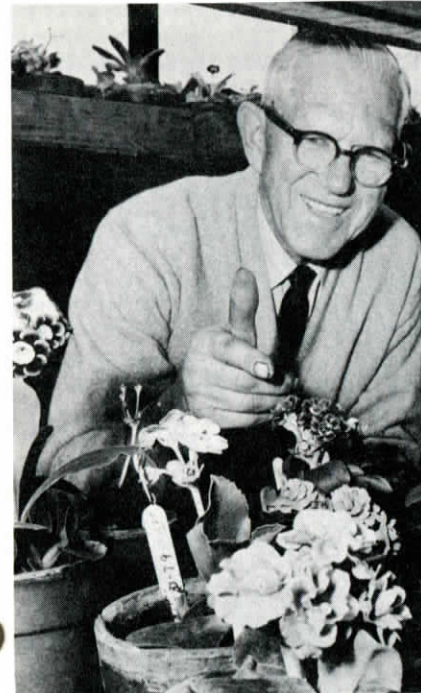
FROM THE TREASURER'S DESK

This is a busy time of year, but I do want to thank all the members who have sent in their dues. This is the third year for the membership blank to be mailed out. The response has been wonderful, and saves many hours I can use in the greenhouses and lath houses.

Due to someone's taking mail from my mailbox we are short six letters, which were delivered to my box November 5. Those members not receiving their membership cards should write me, please. All members' checks are stamped *For deposit only* and signed with my full name. Anyone whose cancelled check does not have my signature as it is on your old membership card, please notify me at once and I will turn it in to the Postal Inspector. All membership cards are sent out the week checks are received.

Mrs. Lawrence G. Tait

President's Message



Ralph Balcom

A very Happy New Year to all Primrose Society members and particularly to those who live in countries other than our own. In examining the membership list, I find that not only are there members in most sections of the U. S., but also in twenty other countries. In this constantly shrinking world, we are now close neighbors no matter where we live. A letter posted Air Mail in England occasionally reaches us in Seattle two days later, having traveled a distance of several thousand miles. It is a new changing world and no longer can the people of one country or of one area pull into a shell and live alone, disregarding the needs, the achievements or even the every-day activities of those of other countries.

With all the disagreement and bickering that goes on constantly between

groups in all parts of the world, it is comforting to know that in the area in which our Society is involved — the growing of flowers — there is no discord. A difference of opinion perhaps, but no serious disagreements. No matter that we belong to different ethnic groups, that we speak other languages or live an entirely different kind of life, our mutual love of flowers brings us close together.

Much of the trouble in the world is due to a lack of understanding between people on all sides. But for some reason there seems to be a mutual understanding and a consideration for the feelings of others among true gardeners. As I have glanced down the list of our members, I have felt that I could pick any name from it at random and could write him a request or make an observation and get a friendly and cordial reply. I have made many fine friends in distant parts of the world by simply doing this very thing.

As I look over the records and achievements of the Society for 1964, I find that it has been a good year. I am proud of the reports of the officers and of the committees. There is not room here to mention all of them but some cannot be overlooked. The account of the Seed Exchange activities is a remarkable one and we are deeply grateful to Mr. and Mrs. Elmer Baldwin for the competent way in which they conducted it. Take a good look at their report published herein and you will see what I mean. Our Seed Exchange program is one of the finest of any garden group.

The report of our treasurer, Mrs. Beth Tait, is also a pleasant one to read. It shows our Society is in excellent financial condition and is gaining in membership. Much of the credit for this is due to the untiring efforts of Mrs. Tait.

We are much indebted to both Mrs. Nancy Ford and Mrs. Anita Alexander who served during the year as editor of the Quarterly. The quality of this, our magazine, has been of the highest order. It is also highly pleasing that so many of our members have responded with articles and contributions for publication. The high standard of this publication cannot possibly be maintained without them.

Shortly before the first of the year, the president appointed Mrs. Dorothy Dickson chairman of a committee to provide, wherever possible, refresher courses for judges, with the object of creating a list of competent people who would be available to serve at our many primrose shows. She did a tremendous job and spent so much of her time and even her own money for expenses that one is hard put to find words to properly thank her. She conducted four separate symposiums where she discussed the proper judging of primulas, gave a course in the technique and procedure of point scoring them and even talked about various kinds and species as well. At the end, she gave a written examination to those who attended, to see that each had learned his lesson well. One such meeting was held in Portland, Oregon; one in Tacoma, Washington; another in Seattle and a fourth in Vancouver, B. C. In all, ninety-five people took the course and also the written test. As a result, a new and

larger list of approved judges was published in the spring issue of the Quarterly. We hope to make this symposium available to other groups this coming year, provided ten or more persons will attend and also if the location is not too far distant from Mrs. Dickson's home in Seattle. Perhaps sometime in the near future a concise judging course similar to this one can be published in the Quarterly for the benefit of those members who live in distant places that she cannot attend. Anyone desiring information about such a study course in his own area can write to Dorothy Dickson, whose address is in the membership list.

Finally, I must comment upon the fine quality of the various shows held last spring. They seem to be improving each year. The official National Primrose Show for 1965 will be staged in Portland, Oregon — sponsored by the Oregon Primrose Society. It was at Portland that our American Primrose Society was founded in 1941. In another year it will be twenty-five years old and we can celebrate its silver anniversary. For many years after it was first formed, all National shows were held there but now for quite some time they have been staged in other cities. How pleasing it is to have this special show return to the place of its origin. It is hoped that many will attend for it will be an event well worth seeing.

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Primrose Echoes

By FRANCES KINNE ROBERSON
L. N. Roberson Co., Seattle, Washington



Candelabras in Maude Hannon's garden. — photo by Orval Agee

No matter what a landscape design offers — woodland glade or rock garden, shrub or perennial border, pool or bog — an extra fillip is added to the whole plan when primroses append their charm of exquisite form and cheerful color in the right places. A few combinations which have given me pleasure are here recorded, although such bits taken out of context from their surrounding areas relate only fragmented but memorable pictures.

The blandness of *Pieris floribunda*, even when surmounted by its creamy flowers, develops more eye appeal when quantities of *Primula juliae* plants carpet the ground and finger in between the shrubs. Such hybrids as Wanda strike the fancy of people who like deep, rich colors and lush growth. One such group utilized an occasional Dorothy or Lady Greer

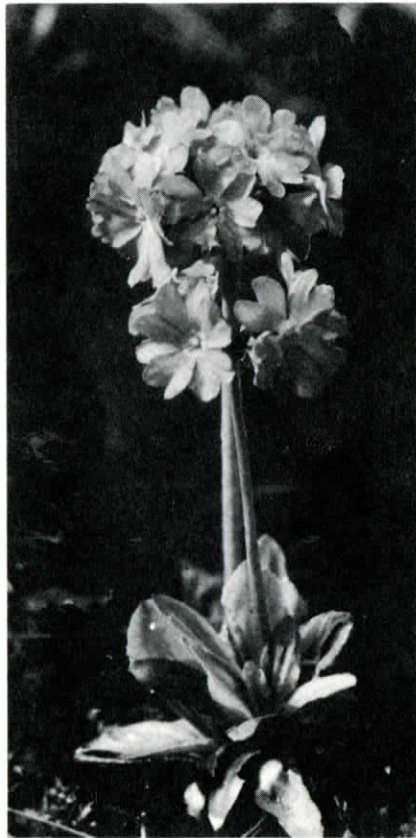
for accent or relief. Less robust but equally effective if planted in sufficient quantity are Helenae, E. R. Janes, Jewell, Mrs. McGillivray, Pam, or Rae.

An odd use of *Primula juliae* itself came to my attention one day as I climbed the steps in a friend's rock garden. The crevices at the back of each step and between the rocks forming the steps were completely filled and even overflowing with the flat mats of the heart-shaped leaves. What a sight it must have been when in flower!

The many primroses which enjoy lots of moisture offer opportunities galore for spectacular effect. Most frequently we have seen *Primula japonica* in open woodland in colors ranging from pale pink to deep rose or red such as Miller's Crimson.

Primula pulverulenta, usually with softer colorings, has been seen almost as often in open shade. "Bartley Strain" always seem to be a favorite.

A close look at the ever-lengthening stem and new whorls of flowers on some of these candelabra primroses elicited this query from a small child: "Will it keep on growing up to the sky?" And actually it does lift the spirit heavenward to see this continuing process of flowering which extends the beholder's enjoyment over such a long period of time. A sometime companion to the candelabras are lush growing ferns, but these have seemed more effective to me when used as a background rather than dotted among the flowers.



Primula rosea

Even luxuriant tropical plants such as *Rodgersia* and *Rheum* have been happily foreplanted with masses of nodding *Primula sikkimensis* when ample winter drainage was available. The pale yellow of these fragrant primroses seemed to be reflected in the deeper yellow centers of *Limnanthes Douglasii* whose low mats carpeted the ground at their feet.

Poolside or streamside plantings of *Primula Florindae*, *P. helodoxa*, *P. Bulleyana* or *P. Beesiana* have been seen planted alternately with clumps of cattails or iris, which constitute a handsome foil when the primroses flower.

Many years ago I saw a small waterfall, which was made of rather ordinary rock, enhanced by the use of *Adiantum pedatum* (Maidenhair Fern), *Corydalis lutea* (Squirrel Corn) with its bright yellow flowers, and *Primula Cockburniana* with its still brighter orange flowers. A bit of scree fell away from the higher rocks, coming to a point of rest beside the small basin where the water collected from the falls before ambling away on a meandering course through a grassy plot. We were not fortunate enough to see this garden at any but the one season but would have been especially thrilled if we could have been there in earliest spring when such bulbs as *Chionodoxa Luciliae*, *Anemone blanda* and *Scilla sibirica* hid the crushed rock of the scree with a multitude of blue and white flowers.

Numerous examples of woodland plantings enriched by primroses come to mind. The simplest ones, yet possibly the gayest ones, have been paths outlined by *Primula polyantha* — sometimes like a Joseph's coat-of-many-colors and other times devoted to a single color such as blue, highlighted in turn by yellow daffodils in the background.

One woodland planting indelibly imprinted on my mind dealt mainly in ground covers such as *Luetkea pectinata* and *Waldsteinia fragarioides* under the tall conifers. A winding path followed the line of least resistance through gently rolling areas, with the various textures and shades of green offering a restful picture, but one highlighted in a few places by large plantings of *Primula cortusoides*, each swatch composed of many plants but devoted to one color only.

Shrub borders enlivened by the ball-like flowers of *Primula denticulata* in white or lavender to purple assume greater importance in the landscape. Here and there a few plants of *Primula rosea grandiflora* interspersed for accent and contrast in height will brighten the plantings.

Unusual auriculas have been seen more often as pot plants grown in alpine houses for show display, but when they have been used in a sunny rock garden they have come into their own as gems for garden display. The bright yellow fragrant ones are easily my favorites.

The Northwestern Unit of the American Rock Garden Society, in one of their exhibits in which an actual rock garden was constructed, was fortunate enough to have available an appealing group of *Primula farinosa* which captivated onlookers from a moist spot near a small pool. *Primula frondosa* repeated the rosy-lilac color of the "Bird's Eye Primrose" at a short distance in a drier area and in deeper tones. Both of these miniatures reproduce themselves easily for us if the seed is allowed to fall about the mature plants. The same is true of *Primula rosea grandiflora* whose bright pink flowers are such a joy.

These then are a few of the haunting echoes from primroses and their companions as seen and loved through the years. If you delve into

the garden experiences you have had, there will be innumerable favorite combinations to add. And the remembering is such fun!



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Primula Parryi - The Untamed

By MARY ANN HEACOCK, Denver, Colorado

Trout fishing is a favorite sport for our family. Many times these fishing trips are combined with family picnics. I usually leave the fishing to our family experts and I roam the area looking for interesting plants. It was on just such a fishing trip at Brainard Lake near Ward, Colorado, that I first saw *Primula Parryi*. It was the last of June and the plants were not in bloom. We had invited two other families along and one of the men had a Doctorate degree in Horticulture. He finally tired of fishing and joined our group as we started to climb over a glacier slide of huge boulders to a snow bank and meadow on the other side.

Beneath the boulders we could hear the water rushing down from the melting snow of Mt. Audubon high above. The constant erosion of the water had formed a river bed underneath the boulders and where there were open spaces between the rocks we could see the icy torrent two or three feet below the natural rock-bridge made of the boulders. After having slipped twice and nearly soaking my tail feathers in this racing stream, I lost my nerve and decided to turn back. The rest of the group did cross the boulder slide and reached the snow bank above, bringing back snowballs to prove their bravery.

The trees of this area consist mainly of Engelmann spruce, limber pine and alpine fir. These are spaced in such a way that here and there one finds sunny openings with lush meadows, while near the lake and stream banks willow trees and low shrubby bushes grow. The soil is spongy and rich with accumulated humus. Shade loving plants such as columbine, woodnymph, pyrola and twin flower

grow closer to the trees, while the meadows are masses of rose crown sedum, little red elephant, monkshood and shooting stars.

When I turned back from the glacier slide I walked toward a clearing near the trees and it was here that I saw my first plant of *P. Parryi*. Our horticulturist friend identified it as a primrose. Later in the day we looked for more of these plants and found drifts of them. The plants were lush growing and in examining them I noticed they had offsets similar to our tame primroses and I wondered why they could not be divided and propagated in this way. Although our friend said they would not live I dug two plants and brought them home.

On the north side of our house I excavated quite a large hole and using sand and peat moss, I refilled the hole; and then, using the bucket of soil I had brought home with the plants, I put this in a pocket made in the peat and sand. I set the two *P. Parryi* in this and watered them well. I kept the soil quite moist all that summer and the plants bloomed that year. They bloomed the next two years, but this last summer they did not bloom, although they are still living. We had a very dry spring and due to illness I did not irrigate as I should have during the early spring. I have never been able to get seed to set on these plants, but if they bloom next year I will try to hand pollenate them.

It is a real thrill to see these plants bloom. In the mountains the plants grow from 12 to 20 inches tall, although the plants I have never got over 5 to 8 inches tall. From three to a dozen flowers, each on a nodding

pedicel, are clustered at the top of a stout stem which rises from the rosette of deep green oblanceolate shaped leaves. The leaves are smooth and shiny. The individual flowers are almost one-half inch across and are formed of five red-fuschia colored corolla lobes which join at their base into a narrow tube. There is a brilliant glowing quality to the flower. Yellow coloring around the throat of the tube gives the flower the effect of a round yellow eye. The blossom looks much like our cultivated primroses. The plants are vaguely similar to the *Auricula* primroses and I wonder if somewhere in generations past they might not have had a common ancestor.

Some people claim that *P. Parryi* has a very strong and disagreeable fragrance. Perhaps my nose does not pick up odors as it should but I have not noticed the foul odor some claim this plant gives off. I think the flowers smell very much like our grape hyacinths. Skunk cabbage does smell — just like rotten eggs! Since it is quite common where *P. Parryi* is found, I wonder if people might not smell the crushed leaves of this and think *P. Parryi* is the one guilty of Blossom Odor!

I have heard reports that *P. Parryi* has brilliant crimson and blood-red flowers but I have not seen these colors. The difference between the red-fuschias and crimsons might be due to a difference in the pH of the cell sap. One of the anthocyanins, the blue cell-sap pigment of plants, could be affected by the soil acidity. This would make the flower more crimson colored in an acid soil and more red-purple in an alkaline soil. This is merely a supposition on my part and I have no proof that such is the case. It could explain the variations in color of the flowers as we have a wide range in soil pH in Colorado.

This spectacular primrose grows in the sub-alpine zone, but like most

sub-alpine plants it is found growing both up and down beyond the limits of its zone, in areas where the trickles of snow water have formed little streams and cold, wet, swampy ground. When growing down in the mountain zone it is found along streams or near lakes, but always where its roots can grow in the cold boggy ground and be covered with mats of moss. Depending on the zone where it is found, the plant blooms in July and the first part of August — the higher the altitude the later the bloom. Here in Denver they bloom in June. The plants can be found in many locations. I know they grow on Berthound Pass near Geroge-town. I have friends who have seen the plants on Pikes Peak, Cameron Pass, Tennessee Pass near Leadville, Gray's Peak, and many other locations.

Sister Patience reports that Chester Strong, whom she knew well, grew *P. Parryi* in Loveland for many years. He had collected the plants and planted them along the north side of his home. Before planting the primroses he had made an embankment and filled this with gravelly sand and peat moss. He evidently was more than usually successful, as Sister Patience says the plants did thrive and were lovely in this location for several years. I wish I had been fortunate enough to have known Mr. Strong. He had a terrific amount of knowledge on the requirements of plants and he was willing to spend the time and effort to supply the needs of all the flowers he loved so well.

The fact that *P. Parryi* is an alpine plant, and requires a long winter rest covered with deep snow, and exacting soil requirements, limits its chances of ever being fully tamed by the average gardener. Its common name, the brook primrose, gives one an inkling of its moisture requirements. This primrose is very difficult to grow in cultivation and few people

have succeeded. Those who have been successful have given a great deal of thought to building up the surrounding soil similar to that in which the plants originally grew. Leaf mold, sand, gravel, peat moss, and good soil can all be made into a soil suitable for these plants. Leaf mold or compost and sand can be used without peat moss providing your soil is already acid. The plants require moisture and lots of it during their growing season. They also need much shade and some sort of cover plants to keep their root system cool in the summer months. It is a challenge that few gardeners can resist.

Two other native primroses grow in Colorado: *Primula angustifolia*, the fairy primrose, and *Primula incana*. I have never seen *Primula incana*, although it is reported to be quite common in wet sub-alpine meadows in South Park in the range west of Denver. It is supposed to be found in the Pikes Peak region also.

Dr. Weber in his *Handbook of Plants of the Colorado Front Range*, page 164, describes *P. incana* as small (3-10 cm. high), leaves small, white-mealy beneath; flowers solitary or few and lilac in color.

I have found plants of *P. angustifolia* but I have never seen the plant in bloom although the flower is reportedly a reddish-purple with a yellow eye. It is an alpine plant, very dwarf and only growing 2 to 3 inches high; the leaves are green and smooth and grow in a whorl as is common with the rest of the family. It is very hard to locate this plant as it blends in with the tundra and it gives one a real sense of accomplishment when a plant is spotted. It seems to prefer stony ground. I have never heard of anyone trying to grow this plant; its native habitat is such a harsh environment above timberline that it would be almost impossible to adapt it to our gardens at a much lower elevation.

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Auriculas in South Colby

By JANET M. ROUND, South Colby, Washington



Ivory, deep red and alpine pink double auricula blossoms, ready to use in hybridizing by Janet Round. Photo by Michael De S. Clarke

Perhaps the Quarterly readers will be interested in hearing of some of my experiences while hybridizing and growing my double auriculas here in Kitsap County, Washington, on Yukon Harbor.

I find that taking my seed producing plants from the pots and setting them in the ground has increased their vigor and they have produced so many offsets, I'm having a problem finding places for them. Nancy Ford suggested setting them out and it certainly was successful. One good double yellow had 15 offsets. I have potted the plants for convenience in hand pollenizing and re-potted them several times during the year. Now, I think I will lift them and return them to the ground after they have been

pollenized, to let the seed ripen and make offsets.

I am handicapped by a bone disease and cannot bend over, or get down on my knees very well, so I have arranged raised flower beds for my double auriculas. I form the beds with brick tile which is heavy enough to stay in place without cement. I make the beds about four feet wide and 12 inches high. This is just the right size for me to sit on the edge and reach half way across to tend the plants. The raised beds also provide good drainage in this rainy land. If the plants need protection from the wind, I put an extra row of tile around the bed and lay plastic or glass over the top. I keep my seedlings in my



*A yellow double auricula in Janet Round's garden.
photographed by Michael DeS. Clarke*

small greenhouse until they are about an inch across, then I set them out in flats until they bloom.

After several years of crossing the doubles, I find I have some lovely single flowered plants which I treasure for their frilled and ruffled petals in shades of lavender, mauve and peach.

I find it helps me to keep a 3 by 5 inch file card on each plant. I de-

scribe it by number of petals, color and special characteristics. Last summer, I tried scotch taping a blossom to the card. Now, in September, the flower has faded but it still shows the size, shape and doubleness. I plan to indicate the true color with a patch of color crayon or water color, when they bloom again.

—Janet M. Round

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Juliae Hybrids

By HERBERT H. DICKSON
Dickson's Perennial Gardens, Seattle, Washington



Species Juliana

When we set up names and standards for plants of hybrid origin, we must be careful that we do not limit the field too much for future plant breeding. It seems to me the terms *Juliana* and *Miniature Poly* with their size requirements are too restrictive and not truly descriptive of the plants they represent. When size and height of bloom are the basic consideration, you rule out too many good plants. Size and height should be in proportion to produce a pleasing effect in the garden.

There are many essential characteristics that separate the *Juliae* hybrids from our present-day strains of polyanthus, acaulis, and species other than *Juliae* in the Vernalis Section. Some of these characteristics are: time of bloom (early or near the species *Juliae*), type of growth (rapid increase by surface root-stalk and blooming with a mass of bloom while the leaves are small and im-

mature), hardy (going nearly dormant in winter).

In selecting a hybrid to name, the greatest mistake an amateur or professional plant breeder may make is to consider only the bloom, and some only the color of the bloom, and forget the other desirable garden qualities. For sure, you must have attractive bloom; but, would anyone ever choose *Wanda* from an exhibit of a dozen picked flowers? Yet *Wanda* is the most widely grown of any primula hybrid and there are still more plants of *Wanda* sold in the markets each year than any other named primula. Why? Because it is healthy and prolific. It blooms reliably. It is permanent with little or no care. It blooms early, when any color is appreciated. The same characteristics that made *Wanda* a success will make any plant a success.

In selecting a hybrid plant to name and sell to the public for garden use,

plant habit and ease of culture are more important than color or size of bloom. If you have bloom, large or small, that completely covers the plant with a good clear bright color or an attractive new color, so much the better.

With this idea in mind I have selected and named three *Juliae* hybrids. *Buttercup*, in 1960, is a prolific stalk form that resulted from *Juliae* hybrid seed from Barnhaven. *Jay-Jay*, in 1964, is a ruby-red cushion type Jack-in-the-green from a vial of Peter Klein's seed marked *Juliae X Jack*. From those twelve seeds I raised six plants to maturity. Four were Jack-in-the-green, of which *Jay-Jay* had the best flower color and growing habit. *Royal Velvet* for 1965 is a selection from my own crossing of species *Juliae* on large hybrid polyanthus. From a large group of similar plants, I picked it as the best for garden effect.

All of these plants were observed for six years before being named and introduced. I had 200 or more plants of each one at the time of introduction. I firmly believe that no plant should be named until it can be introduced and be available commercially to the public.

As to the future possibilities in breeding *Juliae* hybrids, the surface has barely been scratched. A word of caution — never get too far removed from the species in your crosses or you will lose the desirable plant characteristics that make these hybrids good garden subjects. A rich field is still available in combining the various vernaes species with *Juliae* and out-crossing with some of our modern polyanthus and acaulis to bring in some of the new colors.

With luck and persistence some of the *Juliae* hybrid characteristics of hardiness and prolific bloom can be worked into our wonderful polyanthus and acaulis colors while still preserving the typical plant size and general appearance of our modern hybrids. Something of this sort must be done soon to reverse the trend in polyanthus breeding. Primroses should not become biennial bedding plants, expending themselves so much one season that they are incapable of surviving a winter and producing a second good show.

This field is big and challenging with a need for many workers; so, why not try it this spring? It is fun.

— Herbert H. Dickson

Notes on Raising Hardy Asiatic Primulas from Seed

By ALEX DUGUID
Edrom Nurseries — Coldingham, Scotland




Scapigera, grown in Mrs. Berry's garden

When I was a child, how I used to look forward to April in our remote and very stormy glen on Upper Deeside in Aberdeenshire, when once again the wealth of wild flowers glorified the woods, meadows and moors with their riot of colours. Chief amongst these was the Cowslip-Primula which crowded in the woods amongst the wood anemones, in golden multitudes, and were equally at home far up the hillside in the shelter of the mountain juniper. Little did I think in those days that I would spend so much of my life raising and growing members of this same primula's family from every corner of the nor-

thern regions of the earth, and of the odd species from south of the equator.

When asked to prepare this paper on raising primulas from seed, I thought of all the different hardy primulas from many lands, with their varied likes and dislikes. I realised there could be no general approach to this subject, as what is correct for some is certainly not suitable for others. Therefore, I propose to divide the subject into three parts and deal with each part in its turn.

The compost for raising primulas from seed needs to be fairly retentive of moisture but at the same time allow



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surplus water to drain away easily. The John Innes seed compost is very good and usually easily available. To this I add a little screened peat and, for some of the more exacting species, i. e., soldanelloides, omit the lime. Where only small quantities are to be raised, 4 inch seed pans will be suitable, or if several hundred of a species is needed, sow in seed boxes — old fish boxes are ideal for this. See that whatever is used is properly clean, the drainage holes in working order and adequately crocked. Over the crocks place a layer of leaves or other rough material (riddings from peat are good) to prevent the compost clogging the drainage. Fill to within a quarter of an inch of the top of the pan with compost, which should be made reasonably firm. Also before using see that the compost is nicely moist — neither too wet or too dry. Sieve a little fine soil on top, finishing off just under rim level, to leave room for watering. Seed of all species to be sown thinly. It is advisable to lightly brush the top with a small paintbrush after sowing to evenly distribute the seed. Label each pot with name, date of sowing, and origin of seed — all very useful data later on.

Time of sowing varies in different species and I will deal with this as I go on, but for the majority of primulas, from January onwards to April is a good time for sowing. Pans can be plunged in a cold frame or house, and when the weather is suitable exposed to snow and frost. This is best done by raising the sashes on blocks to give air space all round. Little or no watering will be needed in the early months, but for sowings from March onwards regular attention should be given to watering. This can be done by plunging in a basin of water until moisture soaks through to the top, but I incline to the idea that it is safer to water through the top with a very fine rose. The chief thing to bear in mind is that primula

seedlings must never be allowed to dry, especially in the early stages. Failure to realise this is the chief cause of failure in raising plants from seed. Never give water in excess — soggy pots mean rotten seed — but aim to have the compost always just moist.

Having given this general advice on seed sowing I now come to the different sections of seed I mentioned earlier. First I will deal with the primulas that require to be sown green, that is, from absolutely fresh seed; in the case of petiolarid primulas, actually in the green state. All those primulas flower very early in the year, usually from January onwards to late April. Because of this, if seed is required, it is advisable to hand-pollinate with a small camel-hair brush, flicking it from flower to flower to transfer the pollen grains. When fertilised the flowers fade and the capsule begins to swell. During June and early July a sharp watch has to be kept on the capsule to be ready to capture the seed just as the capsule is ripe. This can be ascertained by examining the top of the seed vessel, and when the lids just begin to open, gather the whole capsule and drop into a paper bag. The seed should be sown immediately in prepared compost. The pan should be placed in a north-facing frame — as it is high summer pans would quickly dry out in a sunny frame — or propagating house. Take great care not to allow the pans to dry out. In very hot weather it may be necessary to check twice a day. Amongst primulas to be treated in this way are the *petiolarids*, *Primulas gracilipes*, *edgeworthii*, *scapigeria*, *boothii*, *bracteosae*, *sonchifolia* and *deuteronana*. *P. aureata* should be treated the same way, but it is a very shy seeder, and unless very carefully hand-pollinated is usually sterile.

Primulas of sections other than above that need this treatment are *P. rosea*, that old favourite that al-

ways seems to crop up in seed lists: needs to be sown as soon as ripe — not necessarily green — but as soon as the capsule splits. *P. rosea* seed quickly loses its viability and if kept until next spring will not germinate. Others better sown as soon as ripe to be sure of good germination are *P. helodoxa*, *P. pulverulenta* x *Bartley*, and *P. x Itton Court*. All these will germinate from spring sowings but generally only a very low percentage of them.



Capitata mooriana
Grown at Barnhaven and photographed by Orval Agee.

The "green" seed germinates in from three to six weeks, *P. rosea* usually amongst the earliest. Once through, the seedlings grow freely and quickly develop into small plants. Pricking them out depends very much on the time they are sown; again, *P. rosea* will grow away faster than the others, but should any of the seedlings be of good size by early August from very early sowings, which is possible in an early, frost-free spring, then prick them out into boxes, using the seed compost in preference to pot-

ting compost. The aim is to get the seedlings settled down before winter; these seedlings will go to rest at approximately the same time as mature plants, hence the need of care about late pricking out. Seedlings pricked out after mid-August do not have time to get established enough before winter and they "hang fire" and die. It is a far better plan to leave the seedlings in the seed pan and allow to go to rest naturally, gradually reducing the water until the pan is on the dry side during the cold winter months. Keep the pans in the frame covered with sash. This need not be frost-proof as frost won't harm them; and be sure and give plenty of air at all times except in very frosty weather.

If the pans are watched carefully in late February and March, new growth will be observed with the pushing out of new leaves. This is the time to prick out the seedlings; this time use No. 1 John Innes potting compost, and before commencing pricking out add a thin layer of sand over the top of the box. This helps root development and keeps excessive damp off the necks of the seedlings. Again grow on in a north-facing shady frame under lights, gradually admitting air until the young plants are strong enough to dispense with lights.

The second section of seeds that need special treatment are primulas in the section *soldanelloides*, *Reinii*, *nivales*, *muscarioides*, *cuniefolia* and *obtusifolia*. Primulas from any of the above have proved tricky in cultivation, and taken as a whole have been more adaptable in northern gardens. This difficulty in culture also, in a lesser degree, applies to seed propagation in this section. The actual germination is not difficult — it is the stage between the appearance of first growth and pricking out. The J. I. seed compost is again suitable as a base for all of these sections, with adjustments with extra peat and sand. Sand is very important and must be

clean river sand, sharp and gritty to the feel; soft building sand is useless. Peat should be the finest grade of horticultural peat, finely graded, without hard lumps, and tough fibre. Proceed as before, but fill only to within 1½ inches from the top. Mix two parts finely screened loam, one part screened peat and half a part sharp sand thoroughly together, and use this to top up the pans to within a quarter of an inch from the rim of the pan. Soak until water seeps through the top and set aside to drain for an hour. Seeds of all this section are very fine and *must* besown thinly as they have to remain longer in the seed pans than most primulas. An aid to their sowing is to tip the seed out of the packet onto a clean sheet of white paper and then, under a strong light, very carefully scatter the seed over the edge of the paper evenly over the pan. Seed should only be very lightly covered, just the merest dusting of compost; indeed, the very fine seeded species need no covering at all.

After-care before germination, which in suitable weather takes approximately six weeks, consists of ensuring the pans do not dry out. Newspaper laid on the top helps to conserve moisture, but care must be taken to remove it before germination takes place, otherwise it will "draw" and spoil the seedlings. Watering should always be done by soaking in water until the moisture just seeps through, and should be carried on in this way until two pairs of true leaves appear, when watering with a fine rose can be substituted. Again seed pans get great benefit from fine rain falling on them, and when rainfall is not too heavy the lights can be removed and replaced after a light soaking. None of the primulas of this section should ever be pricked out until they are sturdy and growing freely, hence the need for sowing thinly. The first roots that develop are only seedling roots, and if pricked

out in this stage they only wilt and die.

After they have developed true leaves the adult roots appear, and it is when these have got a good start that the seedlings are ready for pricking out. Again, as before, use J. I. No. 1 potting mixture with the layer of sand on top. After filling the box with seedlings, which should be 2 in. by 2 in. apart, water with a fine rose to settle. Put the boxes in a shaded, close frame, and admit just a crack of air when it is seen that the seedlings are growing, gradually increasing the air as the seedlings grow but keeping them shaded until very well started. If the weather is settled, remove lights at nights, as the seedlings derive great benefit from night dews, but should rain be at all likely, keep the lights on until the boxes are well filled with roots. Primulas such as *reidii*, *reidii Williamsii*, *viali* and *nutans* are best left in the boxes and overwintered in frames, to plant during March or early April the following spring. All of these plants retire into a resting bud during the winter months, the roots at the same time becoming very restricted. If planted out in the autumn they will get pulled out by frost and lost; even established plants suffer in this way. Bear in mind that in nature all these plants are buried deep under snow and escape the hazards of hard frost. Protection under glass helps to tide them over this trial. One other thing: remember to check for watering during mild spells, and also for slugs, which damage the resting crowns, especially of *viali* and *nutans*.

Finally, we come to the primulas that give little or no trouble in raising from seed. Most of them are easy in cultivation and give a wealth of flower in a wide variety of colours. These are the *candelabra*, *capitata*, *denticulata*, *farinosae*, *sikkimensis* and *vernalis* sections. Sow them in pans or boxes in the John Innes seed compost and keep moist. Germination is fairly

regular, at about six weeks, and provided proper care is taken they will grow ahead freely and be ready for pricking out quite soon. The best time for sowing is from February to mid-April. From such sowings the seedlings are growing ahead into the spring weather. Should you have a heated greenhouse, all primulas will come away quicker if they are kept in a temperature of 55 to 60° F. Air should be admitted freely except in very frosty weather. However, not a great deal is actually gained by raising in heat; seeds sown and grown on without the aid of artificial heat are, of course, slower in germinating, but ultimately they will catch up with the others. Aim at having strong, sturdy seedlings by early June, and if this is achieved these same sturdy seedlings will have developed into good plants ere the dormant season comes along.

Reverting to the more difficult primulas to raise, such as *P. Reidii*, *obtusifolia*, *macrophylla*, or any of the petiolarids, if you have difficulty in successfully bringing them on after pricking out, sow them thinly in pots but do not prick out the first year. Carry the pots through the summer and autumn and allow to die off naturally. Nearly all primulas are deciduous, and certainly all the ones recommended for this method. Keep slightly on the dry side; just enough moisture to keep the roots active.

Then, towards the end of January, take the pans into gentle heat (temperature approximately 55 to 60° F.). Never allow to get too warm; ventilate freely if sunny, taking care to open ventilator away from the prevailing, wind so as to avoid cold draughts. When the seedlings are growing freely and have put on two pairs of leaves, prick into boxes in the usual way. Keep in heated house until the young plants are growing freely, and then shift into the cold frame or cold house to harden off. Watch ventilation carefully until plants are thoroughly hardened off, when they can be placed in a reserve frame to await planting out. Treated in this way the more tricky primulas are very much less difficult to raise, and an added advantage is there is no lag in growth when pricked out, they seldom suffer from sun scorch, which kills off so many newly pricked out seedlings in the summer months.

The foregoing notes are only a brief resume of a very absorbing task, and whoever may adopt what I have said in the foregoing notes on primulas, I wish them the best of luck and a crop of healthy young plants.

[Reprinted from the *National Auricula and Primula Society Year Book, 1962*, with the permission of Mr. Alex Duguid.]

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Duties of the Show Committees

By MRS. WILLIAM H. MASSEY, Kirkland, Washington
reprinted from V. 15 No. 1 of the Quarterly

The Show Chairman is manager of the show, and her decisions on matters where conflict in policy or operation arises must be final. I believe, too, that the successful chairman is one who willingly listens to suggestions and strives to make an objective evaluation of them. I also insist upon delegating as much responsibility to co-workers as possible.

The selection of committee chairmen, while becoming the first duty of the Show Chairman, should be exercised with extreme care. It is necessary to consider which people will work best at a particular job and make appointments accordingly. My own choice of committee chairmen is guided by these qualities: (1) Their willingness to devote adequate time and effort to complete their assignment; (2) their ability to plan and carry out a project; and (3) their ability to work harmoniously with others.

Our list of Committees, their responsibilities and duties, are as follows:

The Staging Chairman assists in planning and supervising all phases of the show including schedules and rules, floor plans, and actual staging. At least two assistants who have a working knowledge of plans should be available.

The Publicity Chairman holds a key job in the show and should be a willing worker with ambition and time. An ideal arrangement would include two helpers so that each of the committee could concentrate on newspaper; magazine and garden

club; and radio and television publicity, respectively. Coordination with head committees should be present at all times. No matter how much work is done on a show, or how beautiful the result, it can be a failure if the publicity is not handled properly.

The Properties Chairman helps acquire materials, props, and equipment needed for the show and takes care of all salvage and necessary storage at the close of the show.

The Salesroom and Commercial Chairman lines up people who wish to sell or advertise in the salesroom space. Commercial draw for the number of their sales table, which eliminates favoritism.

The Finance Chairman makes all tax reports, handles all arrangements for tickets and complimentary tickets, collects and deposits all moneys, writes all checks approved by the Show Chairman, and completes a financial report at the close of the show.

The Judges and Clerks Chairman prepares scoring and point schedules for each judge and record sheets for each of the clerks, and assists in determining trophy winners after judging. There should be at least two people to handle this job.

The Ribbons and Awards Chairman orders all ribbons, contacts trophy donors, collects and buys trophies, and helps determine trophy winners after judging.

The Classification Chairman classifies all exhibits and fills out the entry cards. Thorough knowledge

of specimens is vital. There should be one assistant.

The Entries Chairman and Committee take specimen plants from the classification table, recording names and corresponding numbers on a suitable register, and help check out at the close of the show. The number of persons on this committee must be sufficient to assure complete accuracy of records.

The Placing Chairman sets up classification cards on the benches, takes plants from the Entries Committee and places them in their designated places. Several helpers are necessary to help check out plants at the close of the show and to store classification cards in proper order for use the following year.

The Hostess and Hospitality Chairman cooperates with the Finance Chairman and arranges for hostesses at the door to take tickets. She must also have several hostesses in the showroom itself at all times. She is responsible for the guest book and arranges housing when required by out-of-town guests.

The Tea Room Chairman makes all necessary arrangements for refreshments and keeps the tea room open during the hours agreed upon by the Show Committee.

The Historian Chairman keeps a complete record of publicity, schedules, pictures, etc., and makes up a

scrap book to be submitted to the Show Chairman after the close of the show.

Cleanup of course is the responsibility of all members of the club. The more who help on this uninspiring job, the easier it becomes for all concerned.

Though I think it is impossible to put on a show with the "peace at any price" attitude prevailing, I believe it is possible to be firm and avoid hurt feelings. We were fortunate in having a minimum of friction in setting up our show, and I feel that this is no mean accomplishment in view of the tremendous job and the many who work at it. I feel, too, that in association with my co-workers I have formed friendships and understanding of great personal value to me. My sincere thanks is extended to each one of them.



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Growing Polyanthus Under Fluorescent Lights - Who Can Wait for Spring?

By MRS. JOHN G. MAC DOUGAL, Scotia, N. Y.

As soon as the hectic holidays are past, gardeners' minds turn to spring — and the months until then are filled with impatience. In northern New York a greenhouse used to be the only answer to winter gardening, and an expensive answer at that. Use of fluorescent lights has opened a whole new world of gardening through its adaptability and low cost. Getting a head start with *Primula* under lights is to fill the winter months with great pleasure. When spring comes with all its attendant duties, there just doesn't seem to be time for daily admiration of each new sprout, each new leaf. Growing under lights lets you care for each individual plant and watch its development closely.

Once you decide to experiment and give fluorescent lights a try, the practical aspects must be given consideration. First of all is location. While any unused space in the house may be adapted for this purpose, you would be wise to remember that plants mean soil and water, and accidents *can* happen. A source of water close by will save many steps. My table and lights were in a corner of the basement near the set-tubs. I used an old porcelain topped table because it was impervious to water. At the same time it would hold any excess water that drained through the flats. This moisture would help create a higher humidity around the plants.

A reflector type, two-light, 40-watt fluorescent channel fixture (2-40 ID C/W T12 is the information to give your electrician) was suspended centrally above the table by a pulley

system. (Yes, my husband rigged it for me.) This suspension allowed the fluorescent fixture to be raised out of the way for watering and to adjust the distance from the plants as they grew.

The first week in February was chosen for planting time as this would have the *Primula* ready for bedding out the first part of May. I prepared five 8" x 12" flats with damp soil, consisting of $\frac{1}{4}$ garden loam, $\frac{1}{8}$ sand, $\frac{1}{8}$ peat, and a handful of bonemeal. After firming this mixture to within one inch from the top I added $\frac{1}{4}$ " of damp horticultural milled sphagnum moss. This top layer was added for two reasons. Sphagnum moss is sterile and will eliminate damping-off fungus. As a watering guide sphagnum moss is an indicator par excellence. When wet it becomes a medium brown, when dry a light tan. During the first few weeks it is critical that the newly emerged seedlings not be allowed to dry out. I did not sterilize my soil mixture, but pinned all my hopes on the milled sphagnum . . . was I only lucky this time? Use your own judgment and your own experience for your procedure in this matter.

Five packets of polyanthus seed arrived in mid-summer, too late for outdoor planting here in the Northeast. The seed was carefully placed in a glass jar which was tightly sealed and placed in a corner of my refrigerator to wait patiently for seven months and planting time. Each packet was then sprinkled as evenly as possible over its own labelled flat. Using a

mist syringe I sprayed the seeds with moderately hot water immediately after planting and then once each day for three days, covering with plastic film in between. Germination was almost complete within that first week. As each flat started germination, I placed it under the lights. I added no covering soil . . . perhaps because of the fascination of watching the fine probing root emerge from the seed, seek soil, and turn downward.

Two by fours, on edge, were placed under all flats to provide good air circulation. Front and back of the fluorescent reflector were draped with plastic to raise humidity; both ends of the reflector were left open to gain more air circulation.

The actual light tubes were at all times about three inches from the top of the leaves. This is a most important point, as from personal experience I know that spindly plants result from the lights not being close enough. Since intense heat does not develop from fluorescent lights, there was no danger of burning. Of course, there was some heat generated and this helped make a temperature differential of ten degrees Fahrenheit between "night" and "day." Nighttime was 65° F. and daytime 75° F. An automatic timer controlled the 15 hour light period. By all means invest in an automatic timer; the convenience is worth every penny. (Any electrician can supply and install this for you.) The time period of 15 hours was chosen because of the following reasoning: seeds dropping in spring germinate and grow in an increasing daylight period, so I decided to let Nature lead the way.

While raising my *Primula* I was also growing Tuberous Begonias and soon my space was filled to overflowing . . . necessitating use of a south window in the kitchen in mid-March. I gave each flat one week of real sun, then returned it to the lights in a revolving manner. Curiously, upon returning from the week in the

sun, each flat grew by leaps and bounds. Such rapid growth was noted that even if space requirements did not demand rotation, I would certainly use this method again. About every two weeks I used a weak solution of deodorized fish emulsion fertilizer. Since this is an organic compound, I felt there would be no danger of burning. By this time it was mid-April and the individual plants were getting crowded, so each was picked out into an individual $2\frac{1}{4}$ " clay pot, using the same soil mixture as before. I mulched each pot with milled sphagnum moss for the watering indicator. Now space was really a problem! A hastily constructed cold frame saved the day. Extra storm windows were laid against a south side of the house which had a cellar window and where another wall could form the third side of the cold frame. A heavy wool blanket closed off the other end, yet could easily be raised for ventilation. On cold nights in April the cellar window was opened to let warm air flow into the frame. Several times each day a quick check of the color of the sphagnum moss indicated which plants needed watering.



Polyanthus seedling, grown under fluorescent lights by Jan Mac Dougal

The first week in May a sheltered bed was plowed, enriched with peat moss, bonemeal, sawdust and cottonseed meal (cottonseed meal was added to compensate for nitrogen loss due to decomposing sawdust). As I put each of 596 plants into the ground, I marvelled at the root growth since picking them into pots only a short three weeks previous. Almost every plant had filled the pot with roots. By the end of June each plant was large enough to be put in a permanent location, but vacation beckoned and soon it was August. Permanent beds were plowed, enriched as before, and my planting began again, this time with the root systems the size of a softball.

As I write this, in mid-October, the eager *Primula* are not able to contain themselves, but are giving forth with a small preview of next spring, when I know they will be spectacular.

I do want to add one last thought. I believe that plenty should be shared and it was my deepest pleasure to give approximately one-third of my *Primula* to the many friends who had at one time or another shared plants and seeds with me. Anticipation of next spring's beauty will soon be realized, friendships deeply cherished will grow, all because of the tiny seed of a *Primula*.



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Last year we described an efficient seed germinating box that Bob Smith in Arlington, Vermont, built. Recently we saw a modification that intrigues us. The top was made so a seed flat will set in it with a two inch frame on all sides. The box is 12 inches in height with solid sides and bottom. A twenty-five watt electric bulb is placed in the center of the bottom to give just the right amount of bottom heat for rapid germination. The seed flat contains a normal growing medium and is watered normally. If the seed flat is covered with glass or polyethylene, it should be removed as soon as the seedlings begin to appear. With constant bottom heat, seeds germinate more rapidly and the seedlings are sturdier.

— Reprinted from *The Horticultural Newsletter*, V. 11 #12.

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SEED EXCHANGE REPORT — SEASON OF 1964

Cash on hand July 1, 1963	\$ 242.06
Income	
Interest on Bank Balance, Dec. 31, 1963	\$ 7.09
Seed Distribution	390.00
Miscellaneous	2.80
Total	<u>399.89</u>
Total Income	641.95
Disbursements	
Office Supplies	27.89
Postage	77.21**
Seeds Purchased	174.99
Sponsored Memberships	44.60
Miscellaneous	<u>76.88***</u>
Total Disbursements	401.57
CASH ON HAND JULY 1, 1964	\$240.38

* Membership dues received with seed request.

** Including refunds where in excess of \$1.00.

*** Including dues received with seed request; transportation on plant donated by Mrs. A. C. U. Berry for M. Ruffier-Lanche, Lautaret Alpine Station, Switzerland; transfer of funds from Seed Exchange account to General Funds account, \$5.00.

A. P. S. SEED EXCHANGE ACTIVITY — 1964

Requests for seeds	216
Number of packets prepared and mailed	7,247
Number of packets to National Shows (Clearance)	1,144
Total number of packets mailed	8,391
Item sent out in greatest number (#487)	235
Number receiving no requests	9
Number of <i>Primulas</i> on List	152
Number of items in 1964 List	558

Signed by ELMER C. BALDWIN

July 1, 1964

TREASURER'S CASH REPORT — CALENDAR YEAR 1964

Cash on hand January 1, 1964 \$1100.35

Receipts

Dues:		
Year 1964	\$ 1719.64	
Year 1965 & future	379.63	
Commercial Listings	13.00	
Libraries	39.50	
Sustaining	165.00	
Affiliated	47.50	
Family	13.00	
Membership by Seed Exchange	47.00	
Total		<u>2424.27</u>

Plant Sales, Etc.

Washington State Primrose Society plants and seed	218.04	
Tacoma Primrose Society	27.16	
Seed Exchange Donation	50.00	
Quarterlies (back issues)	72.75	
Profit on Fertosan	11.00	
Collections on Business Adv.	201.00	
Tacoma Society for National Show Schedules	18.00	
New Dictionary Fund	5.00	
Interest on Savings	18.55	
Total		<u>621.50</u>

Total Receipts 4146.12

Expenses

Quarterly	2266.59	
Envelopes, Stationery, etc.	112.00	
Portland Mailing Permit	15.00	
Treasurer's expenses, postage, cards, etc.	69.83	
Treasurer's Bond	10.00	
Check Charge	2.10	
Seed Exchange for Seed — Kirkland Show	9.75	
Insurance change-over	2.86	
Membership refund (over-paid)	10.00	

Total Expenses 2498.13

BALANCE ON HAND DECEMBER 31, 1964 \$1647.99

Respectfully submitted by BETH TAIT, Treasurer
Audited and approved by ANN SIEPMAN

STATEMENT OF OWNERSHIP, MANAGEMENT AND CIRCULATION (Act of October 23, 1962: Section 4369, Title 39, United States Code)

- Date of filing: September 23, 1964.
- Title of publication: Quarterly of The American Primrose Society.
- Frequency of issue: Winter, Spring, Summer, Fall.
- Location of known office of publication: 11848 S. E. Rhone St., Portland 66, Oregon.
- Location of the headquarters or general business offices of the publishers (not printers): Same as above.
- Names and Addresses of publisher, editor, and managing editor:
Publisher (name and address): American Primrose Society.
Editor (name and address): Anita Alexander, 11848 S. E. Rhone St., Portland 66, Oregon.
Managing Editor (name and address): None.
- Owner (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual, must be given.): American Primrose Society, 11848 S. E. Rhone St., Portland 66, Oregon.
- Known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages or other securities (if there are none, so state): None.
- Paragraphs 7 and 8 include, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, also the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner. Names and addresses of individuals who are stockholders of a corporation which itself is a stockholder or holder of bonds, mortgages or other securities of the publishing corporation have been included in paragraphs 7 and 8 when the interests of such individuals are equivalent to 1 percent or more of the total amount of the stock or securities of the publishing corporation.
- This item must be completed for all publications except those which do not carry advertising other than the publisher's own and which are named in sections 132.231, 132.232, and 132.233,

PRIMULA HYBRIDS

The primula hybrids are the main attraction for me. Not counting *P. farinosa* which keeps itself to itself, the three species of the area are *P. viscosa*, *P. rubra* and *P. integrifolia*, and each of these crosses with each of the others, so there are also three hybrids to look for. They are liable to be found anywhere but possibly the best places to see them are just above the Bernina Pass and (for *P. viscosa X integrifolia*) the far end of the Heutal, a rather long but not hard walk. The hybrids vary enormously, some being nearer in appearance to one parent and some to the other. As the parents are very variable too, especially *P. rubra*, sorting them out is an absorbing occupation. I do my plant collecting with a camera and colour film now, but have in the past brought home a few offsets of the various hybrids and found them easy to grow and willing to flower. This is more than can always be said for the parents, except the amiable *P. rubra*.

—from "Plant Hunting at Pontresina" by Miss Barbara Clough in V. XVIII No. 1 of The Northern Gardener.



Postal Manual (Sections 4355 a, 4355 b, and 4356 of Title 39, United States Code).

A. Total no. copies printed (net Press Run): Average no. copies each issue during preceding 12 months, 1000; single issue nearest to filing date, 1000.

B. Paid Circulation:
1. To term subscribers by mail, carrier delivery or by other means: Average no. copies each issue during preceding 12 months, 670; single issue nearest to filing date, 639.

2. Sales through agents, news dealers, or otherwise: None.

C. Free Distribution (including samples) by mail, carrier delivery, or by other means: Average no. copies each issue during preceding 12 months, 25; single issue nearest to filing date, 20.

D. Total no. of copies distributed (Sum of lines B 1, B 2 and C): Average no. copies each issue during preceding 12 months, 695; single issue nearest to filing date, 639.

I certify that the statements made by me above are correct and complete.

ANITA ALEXANDER, Editor

Seed Exchange

1965 SEED EXCHANGE

Please note rules governing distribution on order blank. Requests must be on form provided. Names used are those furnished by the donor. The symbol (*) denotes seed was collected from plants in the wild. The "Country of Origin" section at the end of the list again represents the best strains available from growers in the respective countries listed. As these proved to be of considerable interest to the members last season, this section has been expanded somewhat in the present listing and many of them are in better supply, with the exception of *P. auricula* exhibition forms, packets of which will contain six seeds each. The specific names used in this section are those used by the grower; and to avoid possible confusion - *elatior*, *veris*, and *veris elatior* are synonymous with our *polyanthus*. *P. veris acaulis* is our *acaulis*. In this section we have also included genera other than *Primula*, due to an opportunity which could not be ignored: Carnations from France, Lilies from New Zealand, and a Begonia from Germany. The lilies are select and packets will contain five seeds. The recommendation of the carnation grower is: sow and grow at 45 to 50 degrees F. The name of the grower or source of any item in this section is available on request. The contributors have been most generous and their interest makes possible the following fine listing.

CONTRIBUTORS TO THE EXCHANGE

A Kusan, Dr. F., <i>Zagreb, Jugoslavia</i>	AA Putnam, Robert C., <i>Kirkland, Wn.</i>
B Althouse, Mrs. H. T., <i>Laureldale, Pa.</i>	BB Waterson, Mrs. W. J., <i>Anderson, Ind.</i>
C Rose, Frank H., <i>Missoula, Mont.</i>	CC Baylor, Mrs. A. H., <i>Johnson, Vt.</i>
D New York Botanical Garden	DD Foster, H. Lincoln, <i>Falls Village, Conn.</i>
E Danks, Frederick M., <i>Australia</i>	EE Ries, Victor H., <i>Columbus, Ohio</i>
F Balcom, Ralph W., <i>Seattle, Wn.</i>	FF Hamilton, W. J., <i>Ithaca, N. Y.</i>
G Goodwin, Allen L., <i>Tasmania</i>	GG Sassaman, Mrs. W. R., <i>Rochester, N. Y.</i>
H Mennega, E. A., <i>Utrecht, Holland</i>	HH Dress, Dr. W. J., <i>Bailey Hortorium</i>
I Tsujii, Dr. T., <i>Sapporo, Japan</i>	II Goplerud, Robert, <i>Livonia, Mich.</i>
J St. Gallen Botanic Garden, <i>Switzerland</i>	JJ Agee, Mrs. Orval, <i>Milwaukie, Ore.</i>
K Dow, Mrs. J. S., <i>Davenport, Ohio</i>	KK Jackson, Mrs. F. S., <i>Salem, Ore.</i>
L Ranger, Lynn M., <i>Lynn, Mass.</i>	LL Hayward, Mrs. H., <i>Scarborough, Me.</i>
M Laughlin, Mrs. Rosina, <i>Everett, Wn.</i>	MM Harrison, Miss M. H., <i>Seattle, Wn.</i>
N MacBride, Mrs. P. D., <i>Woodinville, Wn.</i>	NN Crewdson, Mrs. Cicely M., <i>England</i>
O Heacock, Mary Ann, <i>Denver, Colo.</i>	OO Ruffier-Lanche, R., <i>Grenoble, France</i>
P Hutmire, Mrs. E., <i>Takoma Pk., Md.</i>	PP Newman, Chas. H., <i>Daly City, Calif.</i>
Q Jelenits, Dr. Stephen, <i>Hungary</i>	QQ Schwarz, Mrs. A. J., <i>Seattle, Wn.</i>
R Langfelder, Richard, <i>Chappaqua, N. Y.</i>	RR Wright, Mrs. W. T., <i>E. Boothbay, Me.</i>
S Peterson, Mrs. R. S., <i>Seattle, Wn.</i>	SS Johnson, Mrs. Nina, <i>Galeton, Penna.</i>
T Noguchi, Kikusaburo, <i>Japan</i>	TT Luscher, Robert, <i>Theford, Ontario</i>
U Klaber, Mrs. D., <i>Quakertown, Pa.</i>	UU Marshall, Mrs. Dorothy, <i>Portland, Ore.</i>
V Allen, Donald G., <i>Barre, Vt.</i>	VV Paterson, Wm. M., <i>Kingston, Ontario</i>
W Kartack, R. E., <i>Baraboo, Wisc.</i>	WW Alexander, Mrs. Anita, <i>Portland, Ore.</i>
X Commercial Source	XX Hieke, Ing. K., <i>Czechoslovakia</i>
Y Trostel, George, <i>Syracuse, N. Y.</i>	
Z Baldwin, E. C., <i>Syracuse, N. Y.</i>	

Due to press deadlines we were unable to list some late contributions. I will be glad to send these listings to anyone requesting them.

- E. C. B.

For complete addresses please see annual SPRING YEARBOOK.

1965 A. P. S. SEED EXCHANGE

1 <i>Achillea clavенаe</i> OO*	52 " sp. (Patagonia) RR
2 <i>Actaea alba</i> GG	53 <i>Arthropodium candidum</i> PP
3 " <i>pachypoda alba</i> FF	54 <i>Arum maculatum</i> BB
4 " <i>rubra</i> VV	55 <i>Asperula odorata</i> BB
5 <i>Adonis vernalis</i> X	56 <i>Asphodeline liburnica</i> HH
6 <i>Aethionema coridifolium</i> R, VV	57 " <i>lutea</i> HH, VV
7 " <i>creticum</i> R	58 " <i>taurica</i> HH
8 <i>Allium albo-pilosum</i> FF, VV	59 <i>Aster likiangensis</i> L
9 " <i>caeruleum</i> VV	60 <i>Astilbe chinensis pumila</i> R, QQ
10 " <i>christophii</i> OO*	61 " <i>simplicifolia</i> U
11 " <i>cyaneum</i> AA	62 " <i>thunbergii</i> T
12 " <i>karataviense</i> R	63 <i>Astrantia major</i> VV
13 " <i>ostrowskianum</i> VV	64 <i>Aucuba variegata</i> M
14 " <i>pulchellum</i> VV	65 <i>Baptisia australis</i> L
15 " <i>rosenbachianum</i> VV	66 <i>Brevortia ida maia</i> JJ*
16 " <i>sikkimensis</i> OO*	67 <i>Bruckenthalia spicuifolia</i> DD
17 <i>Alyssum montanum</i> BB	68 <i>Calceolaria biflora</i> OO
18 " <i>saxatile</i> Z	69 <i>Calluna vulgaris</i> (named forms) DD
19 " <i>citrinum</i> LL	
20 " <i>wulfenianum</i> LL	
21 <i>Amaranthus hypochondriacus</i> VV	70 <i>Calochortus luteus</i> JJ*
22 <i>Amorpha canescens</i> Z	71 <i>Calycanthus occidentalis</i> PP*
23 <i>Amsonia tabernaemontana</i> V	72 <i>Camassia leichtlinii</i> UU
24 <i>Anacyclus depressus</i> - R	73 <i>Campanula alliarifolia</i> GG
25 <i>Androsace primuloides</i> OO	74 " <i>betulaefolia</i> VV
26 <i>Anemone cylindrica</i> DD*	75 " <i>carpatica</i> UU
27 " <i>globosa</i> DD*	76 " <i>collina</i> VV
28 " <i>patens</i> DD*	77 " <i>latifolia</i> EE, RR, VV
29 " <i>pulsatilla</i> AA	78 " <i>persicifolia</i> V, VV
30 " <i>red</i> RR	79 " <i>poscharskyana</i> VV
31 <i>Anthemis burnatti</i> R	80 " <i>sarmatica</i> DD
32 <i>Antirrhinum majus</i> <i>Fiesta</i> O	81 " <i>thyrsoides carniolica</i> O
33 <i>Aquilegia alpina</i> TT	82 <i>Caryopteris Heavenly Blue</i> QQ
34 " <i>Biedermeier</i> X	83 <i>Caryphantha vivipara</i> O
35 " <i>caerulea</i> var. <i>heleniae</i> X	84 <i>Caulophyllum thalictroides</i> Z
36 " <i>canadensis</i> TT	85 <i>Centaurea cyanus</i> fl. pl. <i>Blau-zauber</i> X
37 " <i>ecalcarata</i> LL	86 " <i>jacea</i> Z
38 " <i>glandulosa</i> X	87 <i>Chervil</i> KK
39 " <i>olympica</i> OO*	88 <i>Chrysanthemum coccineum</i> VV
40 " <i>ottonis</i> TT	89 " <i>maximum</i> <i>Little Miss</i> Muffit O
41 " <i>scopulorum</i> RR	90 " <i>weyrichii</i> R
42 " <i>white</i> S, KK	91 <i>Chrysogonum virginicum</i> LL
43 <i>Arabis alpina rosea</i> LL	92 <i>Chrysopsis villosa</i> R, U
44 " <i>muralis</i> R	93 <i>Cimicifuga racemosa</i> RR, TT
45 " <i>stelleri japonica</i> I	94 <i>Cladrastis lutea</i> Z
46 <i>Arctostaphylos uva ursi</i> O*, DD	95 <i>Clematis douglasi</i> O
47 <i>Arctotis stoechadifolia grandis</i> O	96 <i>Clematis macropetala</i> LL
48 <i>Arisaema triphyllum</i> Z	97 <i>Clerodendron thomsoniae</i> VV
49 <i>Armeria allioides</i> (JCA-188) P	98 <i>Clintonia borealis</i> Z
50 " <i>Glory of Holland</i> V	99 <i>Coptis trifolia</i> Z
51 " <i>maritima alba</i> P	

100 *Cortusa matthioli* OO
 101 *Corydalis incisa* T
 102 " *rupestris* BB
 103 *Cotoneaster apiculata* Z
 104 *Cupressus sargentii* PP
 105 *Cyclamen europaeum* X
 106 " mixed wild forms X
 107 " *neapolitanum pink* O
 108 " *persicum* J, X
 109 " *repandum* X
 110 *Daphne mezereum* Z
 111 *Darlingtonia californica* UU*
 112 *Delphinium* RR
 113 " *ajacis Regal Rose* dbl. O
 114 " *dwarf* VV
 115 *Dianthus atrorubens* V
 116 " *cruentus* OO*
 117 " *deltoides* V
 118 " *glacialis* LL
 119 " *gratianopolitanus* OO*
 120 " *neglectus* LL, UU
 121 " *plumarius fl. pl.* Z
 122 *Diascea barberae* VV
 123 *Dictamnus albus* VV
 124 *Digitalis ambigua* GG
 125 " *lutea* GG
 126 " *perennial mixed* EE
 127 " *purpurea* EE
 128 *Dodecatheon dentatum* JJ
 129 *Dodecatheon hendersonii* UU
 130 " *viscidum* C
 131 " *vulgare* O
 132 *Draba carinthiaca* P, R
 133 " *longirostra* R
 134 *Dracocephalum nutans* OO
 135 *Dryas drummondii* R
 136 *Duchesnea indica* R
 137 *Eccremocarpus scaber* UU
 138 *Echinacea purpurea* Z
 139 *Edraianthus graminifolius* BB
 140 *Epipactus latifolia* GG
 141 *Eranthis hyemalis* O, R
 142 *Erica tetralix rubra* R
 143 " *vagans* V
 144 *Erigeron glaucus* S
 145 *Erigeron simplex* OO*
 146 *Eriogonum ovalifolium* DD
 147 *Eriophyllum* VV
 148 *Eryngium alpinum* CC, OO*
 149 *Erythronium grandiflorum*
 C*, WW*
 150 " *hendersonii* DD*, UU*
 151 " *oregonum* DD*, JJ, UU
 152 " *revolutum johnsonii* JJ

153 *Fritillaria imperialis* UU, VV
 154 " *meleagris* AA, BB
 155 " *pallidiflora* VV
 156 *Gaillardia aristata* P, V
 157 *Galax aphylla* DD
 158 *Gaultheria procumbens* Z, SS*
 159 " *shallon* MM*
 160 *Genista patula* OO*
 161 *Gentiana andrewsii* R
 162 *Gentiana asclepiadea* JJ, LL
 163 " *crinita* RR
 164 " *septemfida* var. *freyiana*
 OO
 165 " *thunbergii* T*
 166 " *wutaensis* TT
 167 *Geranium cinereum* var.
subcaulescens TT
 168 " *endressii* Z
 169 " *macrorrhizum* R
 170 " *maculatum* P
 171 " *pratense blue* V, Z
 172 " *sanguineum dwarf* Z
 173 *Geum montanum* R
 174 *Gilia rubra* GG
 175 *Globularia vulgaris* V
 176 *Gypsophila repens rosea* U
 177 *Helianthemum mixed* VV
 178 *Heliopsis humboldtianum* VV
 179 *Helleborus foetidus* R
 180 *Hemerocallis hybrids* Y, Z
 181 " *pink hybrid* O
 182 *Heuchera sanguinea alba* V
 183 " *x Bressingham* VV
 184 *Hibiscus syriacus* (named
 var.) Z
 185 *Hieracium villosum* Z
 186 *Houstonia canadensis* DD
 187 *Houttuynia cordata* R
 188 *Hydrophyllum virginianum* R
 189 *Iberis amara Hyacinth* O
 190 " *Pygmaea* VV
 191 *Impatiens balsamina* dw. bush
 O
 192 " *sultanii walleriana nana* X
 193 *Incarvillea grandiflora* AA
 194 *Iris alata* A
 195 " *dichotoma* GG
 196 " *germanica* Z
 197 " *illyrica* A
 198 " *innominata hybrids* UU
 199 " *Stevens Strain* UU
 200 " *missouriensis* O
 201 " *sibirica* GG
 202 *Ixiolirion montanum* U

203 *Jasione perennis* FF
 204 *Knautia drymeia* Z
 205 *Kniphofia* sp. (Basutoland)
 OO*
 206 *Kolkwitzia amabilis* Z
 207 *Larix laricina* Z
 208 *Leontopodium alpinum* RR
 209 *Leptotaenia purpurea* DD*
 210 *Lewisia columbiana* AA
 211 " *cotyledon* AA, UU*
 212 " " *Sunset Strain* AA
 213 " *heckneri* AA
 214 " *nevadensis* DD
 215 " *rediviva* C
 216 " *tweedyi* AA
 217 *Liatris punctata* O
 218 *Lilium centifolium* Z
 219 " *martagon album* TT
 220 " " *hybrids* Z
 221 " *mixed* RR
 222 " *philadelphicum* DD*
 223 " *regale x Select* TT
 224 " *sargentiae* RR
 225 " *sulphureum* Q
 226 " *washingtonianum* KK
 227 " *x African Queen* O
 228 *Lilium x Aurelian* TT
 229 " *x Pink Perfection* O
 230 *Lobelia cardinalis* W, DD, EE
 231 " *siphilitica* Z, RR
 232 *Lopezia coronata* PP
 233 *Lunaria biennis* VV
 234 *Lupinus polyphyllus rose* Y
 235 *Lychnis chalconica* VV
 236 " *coeli-rosa* O
 237 " *coronaria* VV
 238 " *dioica* EE
 239 *Macrotomia echioides* OO*
 240 *Mahonia aquifolium* Z, MM
 241 " *repens* O
 242 " *rotundifolia herveyi* Z
 243 *Maianthemum canadense* Z
 244 *Malva alcea* Z
 245 " *moschata* VV
 246 " " *alba* V
 247 *Maurandia barclaiana* Z
 248 *Meconopsis betonicifolia*
 CC, UU
 249 " *cambrica* EE, TT
 250 " *latifolia* NN
 251 " *napaulensis* NN
 252 " *paniculata* OO
 253 " *rudis* OO

254 " *SSW pink* NN
 255 " *villosa* BB
 256 " *x pale blue* NN
 257 *Mertensia* KK
 258 *Minuartia laricifolia* ssp.
kitaibelii OO*
 259 *Mitchella repens* Z, SS
 260 *Mitella caulescens* BB
 261 " *diphylla* HH
 262 *Myrrhis odorata* VV
 263 *Neobesseyia missouriensis* O*
 264 *Nepata mussinii* Q
 265 *Nicandra physalodes* VV
 266 *Nigella damascena* VV
 267 *Oenothera* F
 268 *Papaver alpinum* R
 269 " *atlanticum* P, R
 270 " *rheas Shirley* dbl. lav. O
 271 " *somniferum* dbl. *rose-pink*
 O
 272 *Patrinia triloba* LL
 273 *Penstemon albertinus* C
 274 " *cardinalis* GG
 275 " *cardwellii* AA
 276 " *ericoides* GG
 277 " *hirsutus* var. *pygmaeus* P
 278 " *osterhoutii* O
 279 " *ovatus* GG, UU
 280 " *pinifolius* AA
 281 " *serrulatus* GG
 282 " *smallii* GG
 283 " *subserratus* GG
 284 " *tolmiei* AA
 285 *Phyteuma spicatum* R
 286 *Pieris japonica* M
 287 *Platycodon grandiflorum*
 Autumnale UU
 288 " " var. *mariesii* TT
 289 " *sp. nova* VV
 290 *Platy-opuntia phaecantha* O
 291 " *rafinesquei* O
 292 *Podophyllum peltatum* Z
 293 *Polemonium caeruleum* RR
 294 *Polygonum bistorta* Q
 295 " *weyrichii* Q
 296 *Potentilla atrosanguinea* VV
 297 " *grandiflora* RR
 298 " *megalantha* P
 299 " *rupestris* V
 300 " *warrensii* P
 301 *Primula acaulis* Q
 302 " *alpicola* AA
 303 " " *violacea* X

- 100 antiaca JJ
 110 auriculata A, R
 border S, CC, JJ, RR
 exhibition mxd. F
 " ssp. bauhinii OO*
 300 " " ciliata OO*
 310 " auriculata OO*
 X311 " briscoei A
 312 " bulleyana QQ
 313 " burmanica K
 314 " capitata X
 315 " " mooreana X
 316 " chionantha AA, OO
 317 " chungensis X
 318 " clusiana R, OO
 319 " cockburniana AA
 320 " cortusoides A
 321 " denticulata II
 322 " " alba II
 323 " elatior A*, Q*
 324 " " ssp. carpathica Q*
 325 " " " leucophylla Q*
 326 Primula elatior ssp. pallisii Q*
 327 " " " ruprechtii Q*
 328 " farinosa A
 329 " florindae JJ, QQ
 330 " " copper form OO
 331 " frondosa GG, QQ
 332 " geraniifolia GG
 X333 " grandis OO
 334 " halleri OO*
 335 " helodoxa X
 336 " hirsuta X
 337 " japonica A, F, CC, EE, RR, OO
 338 " " deep pink CC, GG
 339 " " Fujii H. P. WW
 340 " " Glowing Embers CC, II
 341 " " Miller's Crimson II, LL, UU
 342 " " Pagoda H. P., red x red WW
 343 " " " H. P., rose x pink WW
 344 " " pink CC
 345 " " pink & orchid JJ, QQ
 346 " " Postford White II
 347 " juliana Dorothy S
 348 " kewensis F, AA
 349 " kitalbeliana A
 350 " luteola OO
 351 " marginata OO*
 352 " melanops X
 353 " nutans X
 354 " obconica A, AA
 355 " parryi OO
 356 " pedemontana OO
 357 " polyanthus B
 X358 " " pink JJ
 359 " polyneura AA
 360 Primula pulverulenta Bartley N
 361 " rosea AA
 362 " rotundifolia X
 363 " saxatilis A, GG, II
 364 " secundiflora AA
 365 " sieboldii T, II
 X366 " " (* Central Japan) T
 X367 " " (* Northern Japan) T
 X368 " " (* Southern Japan) T
 X369 " " var. lactiflora T*
 370 " sikkimensis OO, QQ
 371 " sino-plantaginea OO
 372 " sino-purpurea OO
 373 " smithiantha X
 374 " tosaensis T*
 375 " veris JJ
 376 " " ssp. macrocalyx Q*
 377 " " var. suaveolens (P. columnea) A
 378 " vialii X
 379 " waltonii OO
 380 " x Oriental Sunrise QQ
 381 " x Pagoda QQ
 382 Pseudotsuga taxifolia Z
 383 Psidium cattleianum D, VV
 384 Puschkinia libanotica V
 385 Rhamnus californica PP*
 386 Rheum palmatum HH
 387 Rhexia virginica R
 388 Rhododendron camtschaticum JJ
 389 " carolinianum DD
 390 " dauricum DD
 391 " fargesii DD
 392 " keiskei DD
 393 " minus x racemosum F 2 DD
 394 Rhododendron mucronulatum DD
 395 " occidentale var. sonomense PP*
 396 " ponticum yellow QQ
 397 " racemosum Forrest's 1940 DD
 398 " " x carolinianum F2 DD
 399 " reticulatum DD

- 400 " schlippenbachii DD
 401 " vaseyi DD
 402 Rhodotypos tetrapetala Z
 403 Ruta graveolens GG
 404 Salvia haematodes VV
 405 " sclarea VV
 406 Sanguisorba obtusa KK
 407 Scabiosa lucida VV
 408 Scilla campanulata BB
 409 Scutellaria indica var. japonica VV
 410 Sedum kamtschaticum GG
 411 " stenopetalum O
 412 Senecio abrotanifolius OO*
 413 Shortia uniflora T*
 414 Silene laciniata AA
 415 Sisyrinchium angustifolium Z
 416 " sp. coll. N. Y. GG
 417 " " Penna. GG
 418 " striatum Z
 419 Soldanella alpina JJ
 420 Spiraea bumalda QQ
 421 Synthyris stellata UU
 422 Talinum paniculatum VV
 423 Taxus canadensis Z
 424 " capitata Z
 425 " cuspidata Z
 426 Teucrium hircanum Z
 427 Thalictrum aquilegifolium V
 428 " chelidonii OO
 429 Thlaspi praecox R
 430 Thuja plicata VV
 431 Tiarella cordifolia var. collina R
 432 Townsendia exscapa O
 433 Tradescantia holosericea Z
 434 " virginica VV
 435 Tricyrtis stolonifera R
 436 Trillium erectum Z
 437 " grandiflorum Z
 438 " undulatum Z
 439 Trollius pumilus QQ
 440 Tulipa turkestanica FF
 441 Umbellularia californica PP*
 442 Vaccinium vitis-idaea minus Z*
 443 Verbascum aureum OO*
 444 " phoeniceum V, TT
 445 Verbena ericifolia VV
 446 Veronica incana O
 447 " Minuet O
 448 Vincetoxicum officinalis A
 449 Viola jooi R
 450 " Miniature Black X
 451 " Miniature Blue X
 452 " Miniature Mauve X
 453 " Miniature White X
 454 " Miniature Yellow X
 455 " odorata Z
 456 " tricolor (Gt. flowered pansy) O
 457 Wulfenia carinthiaca OO
 458 Zinnia Pink Buttons X
 459 " Red Buttons X

"COUNTRY OF ORIGIN" SECTION

AUSTRALIA

- 460 P. polyanthus Gartford O. P.
 461 " " Gartford x Pacific O. P.

ENGLAND

- 462 Dianthus laced pinks
 463 " alwoodii laced
 464 P. acaulis Perfection
 465 " auricula Alpine Form
 466 " " Exhibition
 467 " " Show Form
 468 " polyanthus Award of Merit
 469 " " blue H. P.
 470 " " blue shades
 471 " " Fancy Shades
 472 " " gold laced
 473 " " R. H. S. pink H. P.
 474 " " No Name Mixture O. P.
 475 " " Triumph Brilliant

FRANCE

- 476 Carnation Chabaud (original) mixed
 477 " " " Avranchin
 478 " " " Benigna
 479 " " " Carmen
 480 " " " China
 481 " " " Imperial
 482 " " " Marie Chabaud
 483 " " " Rose Vif
 484 " " " Magenta
 485 " " " Princess Alice
 486 " " " Mikado
 487 " Compact Dwarf
 488 Carnation Enfant de Nice



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