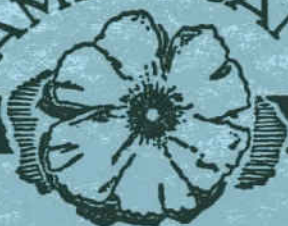


QUARTERLY

of the

AMERICAN



PRIMROSE

SOCIETY

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PORTLAND, OREGON

Vol. 7

JULY, 1949

No. 1

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Quarterly of the American Primrose Society

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PRIMULA VERTICILLATA

Walter C. Blasdale, Berkeley, Calif.

I first saw specimens of this species in San Francisco about the year 1900 at the nursery of Charles Abraham, a pioneer florist and introducer of new plants. It was a case of love at first sight and my infatuation has not diminished during the years that have elapsed. From plants obtained from him I found that it produced seeds freely and was not only a good pot plant but was well adapted to the climate of California even when grown without protection.

Primular verticillata has had a long and eventful history. It was one of the first species discovered which showed wide departures from the conventional characters associated with the genus *Primula* by the early botanists. There are three forms of it, each of which is known only in its own special habitat, namely the Kingdom of Yemen, in the southwestern part of the Arabian Peninsula; the Sinaitic Peninsula; and the highlands of Abyssinia. Each of these forms has been rated as a separate species by different botanists but reduced to the status of subspecies or varieties of *P. verticillata* by others. The first form to be discussed here was discovered in 1763 in Yemen, known since the days of Roman domination as Arabia the Happy, whose rulers for centuries have refused permission to members of the white races to enter the country or imposed restrictions on their activities if allowed to enter. The first exploring expedition whose leaders were able to overcome these restrictions was sponsored by the Danish King, Frederick V. It left Copenhagen in 1761 and returned in 1764. It was composed of a geographer who was also the leader, Carston Niebuhr; a botanist and zoologist, Peter Forskahl; a linguist, deHaven; a cartographer, Baureinfiend; and a physician, Cramer. Over a year was spent in southern Egypt but we are only concerned with the year spent in Yemen. Severe illnesses, probably malaria and other tropical diseases, cost the lives of four of the five men, two while in Yemen and two others shortly after leaving the country. Only Niebuhr lived to return to Europe and it is to him that we are indebted for a detailed and illuminating report of the expedition. Forskahl was the first to succumb. Fortunately he had made elaborate notes on his collections and associated the botanical specimens collected with their scientific names or with new names and descriptions if they represented new species. From this manuscript Niebuhr was able to have Forskahl's *Flora of Egypt and Yemen* published in 1775.

From the eastern shore of the Red Sea there extends easterly a low sandy plain, from 20 to 30 miles wide, crossed by stream beds which

are dry for most of the year. It is a hot, dry, malarial country, which supports a scant vegetation of typical desert plants and a small human population. Its eastern edge is fixed by a great plateau which rises abruptly for several thousand feet and from which rise many short, variously oriented mountain ranges, many of which culminate in peaks exceeding 10,000 feet. These mountains are nearly treeless but there are intervening plateaus and valleys which provide patches of arable land. The mountains intercept the moisture-laden winds which originate over the Indian Ocean insuring moderate rains during the fall and early spring, thus making it possible to grow crops of cereals and vegetables at higher elevations and coffee and semi-tropical fruits, including bananas, at lower levels.

The Danish expedition landed at Lohaya, the most northerly of the Red Sea ports and spent several weeks exploring the coastal plain. Later they reached the mountainous plateau due east of Hodeidah. It was here that Forskahl found, on the slopes of a mountain called Kurma or Kierma, at a height of about 8,000 feet, the first specimen of the plant in which we are here interested. He recognized it as a *Primula* of a new type. Especially distinctive was the abundant farina on both sides of the leaves and the tall scapes bearing several whorls of long, narrow-toothed, yellow flowers. He very appropriately named it *P. verticillata*. His later description ends with the statement (translated) that it grew "on the banks of a stream from Mount Kurma and its flowers gave the odor of *Primula vera*." This is the only collection of it recorded by Forskahl.

It was not until 1887 that a second expedition to Yemen brought to light additional information concerning this species. This was conducted by a French explorer named Deflers who, during a period of only six months, covered the full length of the plateau region. His "Voyage au Yemen" was published in Paris in 1889 and is a most interesting volume. In addition to reports of barometric and astronomical observations it lists the names of 489 plants of which 24 were new. His first collection of *Primula verticillata* was made on the slopes of Mount Scheibam, near the city of Menakha, at 7,660 feet. He states (translated): "Mount Scheibam is covered with a vegetation of annual and perennial plants, rarely under shrubs, forming a steep slope whose freshness is insured by numerous streamlets." A second collection was made far to the south near the city of Yerim but the habitat is not described in detail.

The only other expedition providing further information concerning the Yemen *Primula* was sponsored by the British Museum of Natural History and was mainly devoted to the collection and study of insects. Its activities are interestingly described by Hugh Scott in a volume entitled "In the High Yemen," published in London in 1842. This expedition started from Aden on the Indian Ocean and proceeded through the plateau as far as San'a, the capital of Yemen. Several weeks were spent exploring the borders of the Aden Protectorate just south of the Yemen border. It was there that the author found an area with small fields of long grass similar to an alpine pasture. He states: "The stream, apparently perennial, falls down a succession of rock slides and

precipitous slopes, on two of which, to our great surprise and delight, clumps of a yellow *Primula* grew beside the stream, with the roots in running water on very dark soil." Later he found it in several other places, extending as far north as the environs of San'a and states: "We were, however, unprepared to see *Primulas* in South-West Arabia.



Photo: Walter C. Blasdale

P. verticillata in Berkeley, California

In middle October the main flowering was over, but dead stalks showed that they bear five or six tiers of flowers, while the smaller lateral stalks bore slender throated deep yellow blooms. The stalks rise from rosettes of long narrow leaves, the younger of which are white with a mealy waxy efflorescence." Seed of it was collected which was distributed to three British Botanic Gardens but I have learned from these institutions that none of them grew flowering plants from it. This is the only known record of the collection of seed of the Yemen form of *P. verticillata*.

For the habitat of the second form we travel to the northern end of the Red Sea where the Sinaitic Peninsula divides into two narrow arms. This is also a mountainous region of which Mount Sinai and

Mount St. Catherine are the highest peaks. This region was explored in 1832 by M. Bove and in the report which he published in 1834 he lists *P. verticillata* from the slope of Mount St. Catherine. Evidently he considered it identical with the Yemen form but specimens which were sent to Paris and studied by M. Decaisne were thought worthy of a new name and were published in 1844 as *P. Boveana*. Collections of it must have been made at an earlier date for in 1825 it was in cultivation at the Berlin Botanic Garden. Seed of it was also sent from Berlin to Edinburgh and plants derived from this seed were studied by Sir Joseph Hooker who concluded that they were not specifically distinct from the Yemen form. Apparently it remained in cultivation for many years for in 1870 M. T. Masters studied such specimens and came to the conclusion that they and also the *P. Boveana* of Decaisne should be classed as the *Boveana* variety of *P. verticillata*.

For the third form we pass from the western and lower end of the Red Sea, across a barren coastal plain, and climb into the highlands of Abyssinia, now known as Ethiopia. This area is a confused mass of tablelands and lofty mountains separated by deep and precipitous valleys most of whose streams ultimately flow into the Nile. For several years it was the adopted home of a German botanist and collector named Schimper. He discovered in several localities, always above the 6,600 foot level and on soil moistened by snow water, especially on the flanks of the Tigre Mountains, a plant which was described by Hochstatter in 1842 as *P. simensis* but was reduced to *P. verticillata* var. *simensis* by Scheinforth in 1867. This form was introduced into cultivation in England by Messers Veitch somewhat before 1870 under the name *Primula Couttii* or the Abyssinian Primrose. It was also studied by M. T. Masters who concluded that it was the Abyssinian rather than the Sinaitic or the Yemen form. Unfortunately Messers Veitch left no record of the source of their original stock or the name of the collector who obtained it and the name *Couttii* was given up. The names *P. verticillata* var. *simensis* and later *P. verticillata* have appeared in European seed catalogues up to the present time. Inasmuch as there is no record of the successful introduction of any of the forms of *P. verticillata* subsequent to 1870 I have always assumed that the plant which I obtained in San Francisco about 1900 was the Abyssinian form.

Recently Smith and Fletcher, in their revision of the *Floribundae* Section, published in *Transactions of the Royal Society of Edinburgh*, Vol. 61, 637-644, state that the form still widely grown in England is the Yemen form. This conclusion is based mainly on the fact that its calyx tube, like that of the plant I have grown, is divided almost to its base whereas only about one half of it is so divided in the other two forms. There are other minor differences which confirm this conclusion but they are less constant and therefore less significant. There is also some doubt as to the constancy of the calyx character since relatively few collections of any of the three forms have been made and it may become necessary to call all of them geographic variations of *P. verticillata*.

From a horticultural point of view it makes little difference whether we call the plant here discussed *P. verticillata* or *P. verticillata* var. *simensis*. As far as I can discern from such plates of the three forms

as have been published there is little difference in beauty of form between the Yemen and the Abyssinian ones but both are finer than the Sinaitic form. It is a long lived perennial which increases in size for as many as ten years, forming clusters of crowns each terminating a branch of a superficial rootstock. It needs a moderate amount of water and some sunshine. From February until April it yields a wealth of golden yellow flower clusters. The very small seeds germinate promptly and though the seedlings are of slow growth they do not have the vexatious habit of disappearing one after another for no apparent cause, which is a defect of some of the species of *Primula*. It will not survive heavy frost but very rarely suffers from the light frosts which we experience in this part of California.

IMPORTANT NOTICE

General election of officers will be held at the annual meeting of the American Primrose Society, December 20, 1949, 7:30 P. M. at Library Hall in the Public Library, S.W. 10th and Yamhill Sts., Portland. Members outside the Portland area in good standing who wish to vote but who cannot attend the annual meeting may send for ballot, request to be received by the Secretary, Mrs. Earl Marshall, 1172 S. E. 55th Ave., Portland 15, Oregon not later than November 15, 1949. Marked ballots must be returned to the Secretary before the annual meeting, at which time they will be opened and counted.

Proposed Amendments to the Society's Constitution

To reconcile higher operational costs with low membership dues, an increase of 50c per annum is proposed for members residing in or adjacent to the Portland area since these members receive greater benefits through meetings and study groups, and easier participation in the annual Primrose show than non-local members.

Proposed amendment of Section 2, Article III: Active membership for persons residing within twenty-five miles of Portland, Oregon, shall be \$2.00 a year. Active membership for other persons shall be \$1.50 a year. Dues shall be payable at the annual meeting in December, and will be delinquent if unpaid after two months.

Section 2, Article III currently reads: Active membership shall be \$1.50 a year, payable at the annual meeting in December and delinquent if unpaid after two months.

* * *

In keeping with the idea of greater benefits derived by centralized or nuclear groups it is proposed to amend Sections 6, 7 and 8 of Article III to encourage Sections of the American Primrose Society with representation on the national executive board rather than Affiliated Societies. Sections 9, 10 and 11 are additional.

Proposed amendment of Section 6, Article III: Any group of twelve or more members, who reside within convenient meeting distance of each other, and more than twenty-five miles from Portland, Oregon, may form a Section of the American Primrose Society. Each Section shall have a President, Vice President and Secretary; shall have a minimum

(Continued on page 15)

LOST IN PARADISE

Lulu Mae Hamilton, Sedro Woolley, Wn.

When God created Primroses He surely thought of me. My earliest recollection of a flower, close to my heart, was a little yellow Primrose plant which grew at the far end of my grandmother's "stoop." It was nestled deep in the shade of her luxurious roses. A very humble, and forgotten little plant for my grandmother went all out for roses and spent huge sums for the latest creations.

As I look back now it was a pretty shabby little plant, but it was a "Primrose," and that word struck a responsive chord in my heart.

How far since has the Primrose advanced!

This early spring I stood in solemn admiration as I viewed a hillside, ablaze with the glory of a million shades and hues—deep, heavy colors reminding one of a Royal Court. Against this velvet grandeur, lightly tripped the ballet troupe, entertainers clad in all the delicate pastels which only a master craftsman could design.

So entranced for the moment was I, I failed, at first to see the army of tall, stately Candelabras, marching proudly in formation up the east slope. These, clothed in crimson splendor must have been the advance guard, for, beyond and screened for their protection from the heat of the noon day sun was again seen a blanket of color—delicate, beyond human powers of description, shy Julianas and Auriculas.

Across the gravel path and resting cozily in the shade of a mighty orchid wisteria vine which had flung its self across the tall lattice work between two maples—were the double Primroses. Double lavender, white, and rose.

I stumbled upon all this beauty quite by accident. I had stopped my car to inquire a direction, having lost my way.

I pushed open a white gate. There I saw it all. I felt like an intruder in Paradise. While I was deciding whether to turn and run or venture further into this enchanted garden, I was put at ease by the owner herself. We both just laughed, and it was as simple as that.

She wore blue jeans, low boots and a mackinaw. Her red hair was a sight, for a brisk breeze was blowing up from the lake, and it just wouldn't be good, try as she did to hold it in place with a gloved hand. As she stood her shovel against the wall she spoke and her voice was like liquid music.

She belonged here and I had made a friend.

Before I left I realized all this beauty had come out of a little gray envelope—seeds—seeds carefully grown—reset, and, finally placed in their permanent position.

This all happened such a short time ago, yet since then I've made a very deep study into the mediums for the germination of Primrose seed.

It fascinates me to the point of distraction. I can now tell, almost, to the hour when the little brown caps will appear on the crooked green necks. I never lose a seed.

I crush paper or use coarse material in the bottom of the flat, for free drainage. Then I screen leaf mould, sand, and compost, plenty of com-

post, and mix well. I fill my flat level with the top with this material. On top of this I sift leaf mould as fine as flour. Make grooves and sow my seed pressing it in gently, firmly. A sheet of glass is placed on this. This composition must be of an even moisture. The seeds as they appear at first do not touch the glass as they are in this groove. In a few days I place a frame one inch high, like a crown on the flat, then replace the glass.

At this writing I have several hundred seedlings transplanted in flats to remain 'til spring. These plants are set out three inches apart and



P. kisoana, endemic to Japan, has been in cultivation there as a garden plant for approximately two hundred and fifty years but is only now becoming known to American gardeners. Scarcity, rather than temperament, has been responsible for its absence, and with the foothold it has acquired in many gardens, will soon be one of the most popular *Primulas* because of its fragile beauty, ruggedness, ease of cultivation and amiable rambling habit. Light mauve in color, on rather short, heavily bearded stems, *P. kisoana* makes a delicate pool of color which expands with every April.

rock mulched. Around each little plant I set small rocks, these pressed closely to the plant, anchor the roots. The cold can't heave them out of their snug beds. These rocks hold moisture and warmth. Later, I'll take a spoon and tuck compost around each plant. When I water I trickle it onto the rocks, this reaches the roots without "shock." I tried this method first with twelve seedlings—I wanted to make no mistake. It was no time before these plants were as large again as the others.

My problem was—where to get the rocks? They had to be small and uniform in size.

I made this known to a small boy in the neighborhood—enough said!

I was paying him 5c a quart for rocks—and I had no idea there were so many rocks in the country.

At this point I called a moratorium on the project, until I could take stock of my resources. One could go broke on rocks, especially when my business partner called in his cohorts and every youngster from far and near wanted to sell me rocks.

Here, let me pay a very special tribute to the men and women who have, and are making this joy in Primroses possible for us.

They have worked ceaselessly, tirelessly so that we may enjoy the beauty of their labor. Without this faithful devotion—I for one would still be sighing over a wistful little Primrose like the one at the end of grandmother's "stoop."

TALC FOR SAFETY

A can of talc kept on hand to dilute insecticide and fungicide dusts and powders may save a planting of seed and the seedlings after germination. It has been found that dusts for the control of fungus and insects vary, and that a dust proven safe over a period of years may, another year, be unsafe. Since it is unlikely that formulas are changed, it is assumed that the variation occurs in the strength of the chemicals used in formulating the dusts. Talc also safeguards the very thorough gardener in his theory that if a little is good more will be better. Only a very minute quantity of dust is needed for control, more may be fatal.

Two examples of this occurred this spring in the use of Arasan, recommended as a pre-emergence control of fungus without a noticeable retarding of germination. When the Arasan was applied to the seed, it was thought that only a very slight amount was being used, but now it appears that had the fungicide been diluted with talc approximately 75% more seedlings would have resulted. The effect of the Arasan on different kinds of seed was particularly interesting. On freshly harvested *Polyanthus* seed received from New Zealand (planted in February with the seven-months-old domestic seed) no material delaying or inhibiting of germination was noted, although germination was in three distinct stages as though seed had been planted at two-week intervals. The domestic *Polyanthus* seed was watered in with water at 120 degrees three successive days after planting and upset the usual pattern of germination. Whereas pastel shades are always among the slowest to germinate, these came on the quickest and somewhat more abundantly than the red shades, yellows and bronze which are always so accommodating but which, in this instance, followed the pinks in much smaller quantity. Blues, as slow as pastels to germinate, gave such a poor showing as to be negligible. Reports received on blue seed from the same source of supply and sowed without pre-emergence measures germinated normally. *Acaulis*, which is slower to germinate than *Polyanthus*, gave not more than a 10% germination. *Polyanthus* seed which had been frozen, then thawed and dried off—or apparently dry but evidently damp enough for a heavier coating of Arasan—did not germinate at all.

There was practically no germination in the Julianas and a spotty de-

(Continued on page 12)

CONTROL OF BREAD MOLD ON PRIMROSE SEED

Edwin L. Bechtol

How many times have you been surprised speechless at meeting an acquaintance least expected. Such was my feeling when I discovered the fungus you know as common bread mold infecting germinating Primrose seed. I had previously known this fungus as a saprophyte (growing on non-living material) and here it was spreading on live germinating seed and existing as a parasite. I then recalled that this fungus was known to infect potatoes and other root and tuberous vegetables in storage. Why then should it not infect germinating seed when the environmental conditions were ideal for its growth.

This fungus, *Rhizopus nigricans*, may be described as a mass of white cottony mycelium with dirty gray sporangiospores. The mycelium is the root growth etc. of the fungus and the sporangiospores are the stalks or fruiting bodies which protude from the germinating seed like pins from a pin-cushion. Splitting a seed thus infected down the center for examination of the two halves reveals the endosperm gone, the shell soft, and only a small milky white glob of jelly-like material left.

In our case the seed had been sown and left uncovered on a one-half inch blanket of finely shredded sphagnum moss, a medium which does not encourage the growth of fungus. You might then well ask where or how did the fungus start. Since we had not given the seed a pre-emergent treatment of fungicide there were two possibilities. First the spores of the fungus might have been present on the seed when the seed was sown, and second, since the seeds were not covered the fungus spores might have been carried to the seed by the wind. The latter possibility seems the more plausible.

A brief description of how the fungus spreads might well be in order. Starting with a fully developed body of fungus, there are millions of spores being given off and carried away by the air which gradually settle to the ground. Conditions must be perfect for the development of the fungus if this spore is to germinate and produce a colony. There must be moisture present. The temperature must not be too hot or too cold. The more stagnant the air the better. If the conditions are not right the spore dies, but some of the spores do alight under ideal conditions. Soon the spore germinates and a tiny mycelium or root starts to grow and branch. After a time this horizontal branching sends up a hypha and upon the hypha the spores are borne. In one patch of fungus all of these operations will be going on at once. Therefore the fungus is able to spread rapidly through the germinating beds.

Our particular situation was a delicate one. We had to use a fungicide strong enough to kill the fungus yet one mild enough to leave the germinating seed undamaged. After a careful consideration of the two factors involved we decided to try potassium permanganate. This material is not a fungicide but rather a sterilizer. The fungus was checked to a degree, but not controlled, using potassium permanganate applied at the rate of one ounce per ten gallons of water.

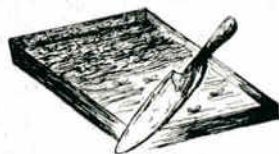
Since there was no available data on the action of fungicides on Primrose seed, and since we had had a good example of the toxic effect of a

certain pre-emergent fungicide in our early spring sowing of Primrose seed, a safe control was still to be found. Our next choice was Semesan, a mercuric fungicide fairly low on the plant toxicity scale. Because the seed media was becoming quite damp, we decided to apply the fungicide dry. To do this we diluted the dry semesan powder with talc at the rate of one to ten. The application was made at 4 P.M. and the next morning little change was noted in the fungus activity.

It was decided that the fungicide was not entering the seed coats when applied in dry form. A four-hour test was run using normal strength Semesan solution on a few germinating seed. No damage was noted, therefore, the first application of normal strength Semesan solution was given the germination at 12 M. A few minutes after the application a diminishing of the hypha was noted. At 3 P.M. the hypha appeared shrunken and twisted under a hand lens.

The next morning it was evident that the fungus was under control. Another application of the fungicide was given that day, and no more has been necessary. The few hypha present at this time do not spread. The presence of the insoluble mercury controls it nicely.

Semesan, then, solved the problem of controlling *Rhizopus nigricans*. We hope to run an experiment soon in an effort to test the majority of the new fungicides on the market today for controlling not only the bread mold but another fungus which plays a large part in the loss of seedlings and the failure of seed to germinate, the damping-off fungus, *Pythium debaryanum*. We have all seen this fungus on growing seedlings eat away the base and topple the young plants. Many of us, however, and especially those growers who cover their seed, never realize that this same fungus might have been responsible for the apparently poor germination of a planting of seed.



Seed Exchange Discontinued Temporarily

The primary reason for discontinuing the seed exchange is the danger of distributing the virus (or viruses) infecting Primulas which is seed borne as well as transferred from infected to clean plants by insect carriers. Until such time as this virus can be recognized by amateur growers and infected plants destroyed, it is unwise to distribute seed which may have been picked from such plants.

Articles from authoritative sources are in preparation and expected for spring publication.



Photo: The Oregonian

Silvered pink P. pulverulenta var. Bartley strain
arranged by Mrs. Philip Hart, Portland.

The Chairman's Report on the Society's Asiatic Show

The Society held a very successful, non-competitive show of Asiatic Primulas May 23 and 24 in the Oregonian Hostess House. Eleven members brought a total of 52 pots or boxes, some containing up to half a dozen plants. Seventeen full species were represented, as well as many varieties and hybrids. The largest group (17) was of hybrids of

Bulleyana and Beesiana with a wide range of very fine colors. Other notable hybrids were Cockburniana x Pulverulenta and Aurantiaca x Pulverulenta, both shown by Mrs. John L. Karnopp. Other outstanding plants were Mrs. Florence Bennett's Bartley strain *P. pulverulenta*, the Torpen's Sikkimensis and Capitata var. mooreana (several in a box), and Mrs. Karnopp's Secundiflora and her three Nutans in a small pot. Five *P. Waltoni*, and 4 *P. microdonta* showed the wide color range that these wonderful species offer. Mrs. A. C. U. Berry's contribution of cut flowers of numerous species and hybrids made a fine display, and showed the possibilities of some of the Asiatics for cut flower use.

At the April meeting, the members were asked to bring in between three and four hundred plants, which was calculated on the basis of one per square foot of table space. We could have taken care of about 20 plants more than we showed, but I hate to think of what would have happened if three or four hundred had actually been offered. I had forgotten how big pots have to be for some of the Asiatics, and how far the plants spread beyond the pots!

No admission was charged for the show, and consequently our records are not perfect, but attendance was good and interest high.

The Society owes a debt of gratitude not only to the exhibitors, but also to the following members who assisted in setting up and dismantling the show and who took turns at the information desk for the two days: Mrs. Robert Boyd, President Higgins, Mrs. Gale LaFollette, Mrs. Ben F. Smith, and Mrs. Howard Van Nice.

Respectfully,

R. M. BOND, Show Chairman

(From page 8)

velopment in the mutant forms of Polyanthus, such as Jacks-in-the-green and Hose-in-hose. Now the question of interest is whether or not the remaining seed is only temporarily dormant with germination scheduled after exposure to the winter, or whether it is permanently affected.

Why the Auriculas, all types including Show varieties, should be totally unaffected by the Arasan is unknown. Nor why the belled Primulas of the Sikkimensis Section were completely uninhibited when all of the Candelabras were greatly retarded still remains unsolved.

However, mortality in the belled group was high when applying the usual and heretofore safe insecticide. The first germination of Candelabras was burned off in the same way, but the thick-skinned Auriculas showed no ill effects. Some damage was taken by the Polyanthus in the cotyledon stage.

The small, hand dust gun usually used for dusting seedlings has no controlling applicator and the first few blows after filling the gun can be counted upon to deposit heavy amounts no matter how carefully applied. Equal parts of talc and dust when used on seed beds and young seedlings is a good precautionary measure and a sizeable box of unscented talc may be obtained at any drug store for very little.

PRIMULA CHROMOSOME COUNT

By request of those interested in hybridizing, the chromosome count of the following list of *Primula* species, as published in the Chromosome Atlas of Cultivated Plants by Darlington and Janaki Ammal, is reprinted. Material copied and forwarded to the Editor's office by Mr. Jacques Legare, Quebec.

PRIMULA $x = 8, 9, 10, 11, 12, 13$

Section 1: SOULIEI $x=8$		Section 8: MUSCARIOIDES $x=10$	
Rupicola	16	Atricapilla	20+1-3f
Section 2: INAYATTI $x=8$		Bellidifolia	20
Inayatti	16	Cernua	20+3f
Section 3: FARINOSAE $x=8, 9, 10, 11$		Littoniana	20
(I) Blandula	16	Apocrita?	40
Caldaria	16	Cyanantha	40
Genesteriana	16	Deflexa?	40
Glabra	16	Lepta	40
Knuthiana	16	Menziesiana	40
Sertulum	16	Section 9: SOLDANELLOIDEAE $x=10$	
Stenocalyx	16	Buryana	20
(II) Exigua	18	Nutans	20
Farinosa Birds-eye P.	18, 72	Reidii	20
Farinifolia	18	Wollastonii	20
Froncosa	18	Section 10: YUNNANENSIS $x=11$	
Fauriei	18	Yunnanensis	22
Modesta	18	Section 11: MINUTISSIMAE $x=11$	
Longiflora	36	Reptans	22
Scotica	54, 72	Section 12: CUNEIFOLIA $x=11$	
Capitellata	72	Nipponica	22
Magellanica (decipiens)	72	Suffrutescens Sierra P.	44
Stricta	126	Section 13: AURICULATA $x=11$	
(III) Fasciculata	18	Rosea	22
Chrysopa	20	Elliptica	22
Yargonensis	20	Algida	44
Tibetica	20	Luteola	44
Involucrata	22	Auriculata	45
Sibirica	44	Section 14: DENTICULATA $x=11$	
Section 4: CAPITATAE $x=9$		Denticulata	22+0-5f
Capitata	18	As Cachemiriana	44+8f
Crispata	18	Erythrocarpa	22+0-5f
Lacteocapitata	18	Crispa	44+f
Mooreana	18	Section 15: SIKKIMENSIS $x=11$	
Sphaerocephala	18	Didyma	22
Section 5: MALACOIDES $x=9$		Firmipes	22
Effusa	18	Flexipes	22
Forbesii	18	Florindae	22
Malacoides	18, 36	Microdonta	22
Section 6: VERTICILLATA $x=9$		Prionotes	22
Floribunda	18	Pseudosikkimensis	22
Verticillata	18	Pudibunda	22
Kewensis (flor. \times vert.)	36	Reticulata	22
Section 7: AURICULA		Secundiflora	22
$x=11$; x 3rd power=31 (9+11+11)		Sikkimensis	22
Palinuri	44	Vittata	22
Hortensis	54?	Section 16: CANDELABRA $x=11$	
Auricula	62	Anisodora	22
Hirsuta	62	Aurantiaca	22
Viscosa	62	Beesiana	22
Glaucescens	62?	Bulleyana	22
Minima	62?	Burmanica	22
Marginata	90?	Chungensis	22
		Cockburniana	22

(Candelabra, Continued)

Helodoxa	22
ianthina	22
Imperialis	22
Melanodonta	22
Miyabeana	22
Morsheadiana	22
Poissoni	22
Pulverulenta	22
Wilsonii	22
Japonica	44

Section 17: ROTUNDIFOLIA x=11	
Gambeliana	22

Section 18: NIVALES x=11	
Chionantha	22 + 2—7f
Macrophylla	22
Maximowiczii	22
Obliqua	22
Purdomii	22
Russeola	22
Sinoplantaginea	22
Tangutica	22
Ellisiae	44
Leucops	44
Parryii	44
Rusbyi	44

Section 19: PETIOLARES x=11	
Winteri	22

Section 20 VERNALES x=11	
Amoena	22
Balearica	22
Carpatica	22
Columnae (veris)	22
Elatior Oxlip	22
Heterochroma	22
Ingwerseniana	22
Intricata	22
Juliae	22
Leucophylla	22
Lofthousii	22
Macrocalyx (veris)	22
Pallasii	22
Pannonica (veris)	22
Paxii Pseudoelatior	22
Rhododendricola	22

Do You Have a Request?

From an editor's viewpoint, the next best thing to receiving an article for publication is to receive requests for specific subject matter. Unless your particular interests and questions are made known an issue balanced to fit the season and the tastes of beginner and advanced grower is attempted with the material on file.

To make the publications serve the needs and pleasure of the members to the fullest a list of requested topics is needed. There are experts in all branches of Primrose culture in almost every area who are willing to give you the benefit of their experiences and knowledge. Please forward requests to the Editor's office, Gresham, Oregon, or to the Secretary, Mrs. Earl Marshall, 1172 S. E. 55th Ave., Portland 15, Oregon.

(Vernales, Continued)

Ruprechtii	22
Sibthorpii	22
Veris Cowslip	22
Vulgaris Primrose	22

Section 21: MEGASEAFOLIA x=11	
Megaseaeafolia	22

Section 22: GRANDIS x=11	
Grandis	44

Section 23: CORTUSOIDES x=11,12,13	
(I) Geraniifolia	22
Heucherifolia	22
Latisecta	22
(II) Maclareni?	24
Mollis	24
Seclusa	24
Septemloba	24
(III) Pauliana	24
(IV) Cortusoides (dentiflora)	24
Hymenophylla	24
Lichiangensis	24
Polyneura	24
Saxatilis	24
Veitchii	24
Sieboldi	24, 36
(V) Jesoana	26

Section 24: BULLATAE x=12	
Forestii	24
Fruticosa	24
Redolens	24
Rufa	24

Section 25: SINENSIS x=12	
Calciphila	24
Sinensis Chinese P.	24, 48

Section 26: OBCONICA x=12	
Obconica	24, 48
Sinolisteri	24
Werringtonensis	24

Section 27: PYCNOLOBA x=12	
Pycnoloba	24

Section 28: REINII x=12	
Reinii	24

(From page 5)

of four stated meetings a year; and shall transmit annually to the corresponding Secretary of the American Primrose Society a report of the activities and accomplishments of the Section.

Proposed amendment of Section 7, Article III: The officers of each Section shall be listed in the official publication of the American Primrose Society, and the President of each Section shall be, ex-officio, a Vice-President of the national organization, and will be expected to take part in such meetings of the Executive Board of the Society as he may find it practical to attend.

Proposed amendment of Section 8, Article III: Sections may make such by-laws for the governing of their meetings as they may find necessary, and may levy Section dues (in addition to the annual membership dues paid directly to the American Primrose Society) to meet such expenses as they may incur.

Proposed additional Sections 9, 10 and 11, Article III. Section 9: Sections are encouraged to hold shows and exhibitions, under such regulations as they see fit, but in competitive shows the classification and judging must comply with the standards set by the national organization.

Section 10: Organization membership may be taken out by local, state, or National garden clubs, or similar organizations, that have especial but not preeminent interest in Primulas, affiliating themselves with the national organization; and such membership shall be based upon payment of 10c per member belonging to the affiliated society as of the end of such society's fiscal year.

Section 11: Organization membership shall entitle the organization, as such, to receive copies of all bulletins, reports, and publications issued by the American Primrose Society, in a proportion of one copy to each fifteen members; representation by a delegate at shows and other functions of the Society, and votes in the annual and other business meetings in the proportion of one vote to each fifteen members.

Sections 6, 7 and 8, Article III, currently read: Section 6. Organization membership may be taken out by locally organized Primrose societies affiliating themselves with the national organization and such memberships shall be based on a payment of 10c per member belonging to the local society as of the end of such society's fiscal year.

Section 7. Organization membership shall entitle the organization as such to receive copies of all bulletins, reports and publications issued by the Society in a proportion of one copy to each ten members; representation by a delegate at shows and other functions of the Society and votes in the annual and other business meetings in the proportion of one vote to each ten members

Section 8. Sustaining and life memberships carry all privileges designated for individual members.

* * *

The proposed amendments of Sections in Article III automatically affect Sections 1, 3 and 4 in Article IV. If proposed amendments are accepted, these Sections will read as follows:

Section 1. The officers shall be President, Vice President, Recording

Secretary, Secretary-Treasurer, six directors, and ex-officio Vice Presidents.

Section 3. All officers except the Secretary-Treasurer shall be elected by ballot at the annual meeting on the third Tuesday in December. The Secretary-Treasurer shall be elected by the Board of Directors in December for the coming calendar year and the stipulated remuneration will also be set at that time. The ex-officio Vice Presidents shall be elected by the Sections or affiliated organizations in accordance with their own constitutions and by-laws.

Section 4. Vacancies, except those of ex-officio Vice-Presidents, shall be filled by the Executive Board for the unexpired period of the term of office in which the vacancy occurs.

Sections 1, 3 and 4, Article IV currently read: Section 1. The officers shall be President, Vice President, Recording Secretary, Secretary-Treasurer and six directors.

Section 3. All officers except the Secretary-Treasurer shall be elected by ballot at the annual meeting on the third Tuesday in December. The Secretary-Treasurer shall be elected by the Board of Directors in December for the coming calendar year and the stipulated remuneration will also be set at that time.

Section 4. Vacancies shall be filled by the Executive Board for the unexpired period of the term of office in which the vacancy occurs.

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