MAGNOLIAS AND PRIMROSES by D. Todd Gresham
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QUARTERLY

The Cover Illustration—D. Todd Gresham is not only a hybridist but an excellent photographer. He is responsible for the lovely magnolias on the cover. See article on page 115.

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To A Primrose—

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AMERICAN PRIMROSE SOCIETY
Primula Acaulis "Premiere."
A New Variety Since 1960

By ROBERT LUSCHER, Editor in charge of translations, Thedford, Ontario

In the last Seed Exchange list seed of the "Premiere" were included. Mr. Luscher has sent in a translation from the South German Market Gardener's Journal which will be of great interest to those who were fortunate enough to include these seed in their order. We hope Mr. Elmer Baldwin, Seed Exchange Chairman, will secure more of these for the 1964 list so that we may see for ourselves this new strain.

Colchicine treatment produced a mutation, which become the foundation for an entirely new strain within the P. acaulis group. In fact, the new plant structure is eye catching. The short, small leaves form a flat rosette, leaving the centre free, thus a compact floral bouquet looks at you. Every grower knows from his own experience what this means in relation to selling attractiveness and eye appeal.

The colour range and size of flowers is equal to the best strains, and growers in foreign countries have shown increasing interest, particularly where quality counts.

Magnolias and Primroses

D. TODD GRESHAM, Santa Cruz, California

Mr. Gresham is responsible for the raising of thousands and thousands of Polyanthus Primroses each year at Veitch and Reineelt, Capitola, California. His articles in National Magazines on the Magnolia this past year prompted the Primrose Quarterly to request this special article which he graciously sent.

Countless flowering plants have been inter-crossed to enrich and vary our gardening pleasure. It is a strange, difficult to comprehend fact that a plant family of the Magnolia's magnificent stature has been so neglected in this respect.

In 1826 Chevalier Soulange-Bodin, a Frenchman, introduced the progeny of his natural or artificial cross, Magnolia denudata x M. liliflora, to the gardening world. Today, some 137 years later, asexual propagations from the original plants of Magnolia x Soulanguiana find favor as the ultimate in Spring floral finery.

One hundred and one years later, in 1907, an Englishman, Mr. Peter Veitch, of the great English nursery bearing his name, crossed Magnolia Campbellii with pollen from M. denudata, germinating three seedlings. The most famous of the three, M. x Veitchii, flowered in 1917. It is a beautiful, high standing white flower with the exciting rose-pink base stain of M. Campbellii, a great addition to magnolia culture.

In recent years, a cross between Magnolia stellata and M. kobus by the Arnold Arboretum, has been distributed as Magnolia x 'Dr. Merrill,' combining the hardiness of both parents, with M. stellata's multiplicity of petal in a larger flower. The tree is free flowering and of good garden value, especially for colder sections of the country.
The Editor

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Seed Pod . . . Photographed by D. Todd Gresham.

ことはできるため、水をよくとるようにする。二年後には、これらの樹木は数本の木を形成するだろう。それは非常に美しい景色を形成するだろう。

Dr. Frank Galyon は、米国マグノリア学会の創設者であり、その目的は、アメリカ合衆国のマグノリアの野生種と栽培品種の収集と情報の流布を促進することである。この学会は、マグノリアの研究者や愛好家が交流する場を提供しており、新しい品種や栽培法についての情報が定期的に発表されている。

作者：フランクリン・ギャロン博士

アメリカン・プリムローサ・ソシエイの会員

Aquatic Self-Watering Planters

Useful to Primrose Growers

The Rutland Nurseries, P.O. Box 782, Rutland, Vermont advertise an aquamatic self-watering planter which works very well for primula seeds as well as containers for rooting offsets of show auriculas. The container can be set aside and forgotten for at least 20 days (depending on the temperature). With tiny seedlings it is so easy to overwater and drown plants. This container works much the same as growing seedlings on a brick and one need not fear that the seedlings will dry out. This should be of particular interest to members who go away on vacations and plant hunting expeditions in the summer time.

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"Tree root problem solved" as related by member Burr Bronson in the last issue (page 87) has caused favorable comment from several readers. One member, Thirza Meyer who recently moved to Orange, California from Chicago is going to try it under an apricot tree. Your editor has tried it under an old alder tree in the hog. Two years ago I built up a box of scrap lumber around this old tree but the roots managed to get in and rob my primroses of moisture. This summer I chopped out the old surface roots and put down plastic as Mr. Bronson suggests. I hope it works better than the loosely constructed wooden box.

The Editor
IN MEMORIAM

One of the greatest auricula experts and hybridist, Mr. Cyril George Hay- som, of Stannington Crescent, Totton, England, has passed away at the age of 71. It was with his and Dan Bamford's assistance and guidance that American show auricula growers were able to set up the present standards of perfection that are followed in America in judging show auriculas. Many of our members have corresponded with him for many years and his publications are in our garden libraries. He was a life member of the American Primrose Society.

At the time of his death he was President of Totton and District Gardeners' Society and Chairman of Barley Horticultural Society. Two years ago he achieved a long desired ambition—to produce a true black auricula.

Christmas Gift Suggestion

Again, may we suggest that a Gift Subscription to the American Primrose Quarterly may be a welcome suggestion. The treasurer will mail a Christmas card to the recipient stating that you have given them the gift subscription. By sending the subscription in now the new member will be able to participate in the January Seed Exchange issue.

Another gift suggestion to current members could be back issues of the Quarterly to old members. If you do not know which back issues they lack a credit could be established and the recipient of the gift could notify the editor or treasurer which issues are desired.

Affiliated Clubs...

There has been some confusion in the past regarding affiliation of garden clubs with the American Primrose Society. Any garden club may become an affiliate by paying twenty-five cents per member to the A.P.S. There is a minimum of ten members or $2.50. A subscription to the Quarterly will be mailed to whom-ever is designated by the local club and this Quarterly will be placed in circulation in the club library. The club may send in for the seeds available in the January issue Seed Exchange list and distribute the seeds among the members. When an addendum list is available on request further seeds may be ordered and often a summer clearance list is also available. The Culture Chart and Index of back issues is, of course, sent with the membership card showing affiliation. The garden club wishing to affiliate need not be called a Primrose Society Club. Slides are available to affiliated clubs at a very minimum charge for mailing of the slides.

A.P.S. Dues Statement

Last year the dues statement which was inserted loosely into the Fall Quarterly brought excellent results from our members. Having just taken over the job of treasurer Mrs. Tait was most appreciative of the wonderful response. We are enclosing the 1964 dues statement in this issue in the hope that all members will respond to this billing thereby saving a very busy unpaid officer countless hours and great expense when it becomes necessary to bill members individually.

Overseas members may find it more convenient to use this same form to mail their dues to our British Representative and Treasurer Mrs. Gwendolyn Hawkes. Mrs. Hawkes has been of great help in setting the accounts of the late Mr. Lawford, whose long illness had caused many paid members great concern and inconvenience.

Sustaining and Life Memberships

Members who wish to show especial interest in the American Primrose Society may become sustaining members by paying $5.00 rather than the regular $3.50 dues. This will be indicated in the Spring Yearbook membership list with an asterisk. Life memberships are $100.00 and these are indicated with two asterisks. The latter may be deducted from your income tax.

The following is taken from the South German Market Gardener's Journal

Again, the "Non-irritant" Primula obconica

Contributed by ROBERT LUSCHER,
Editor in Charge of Translations, Thedford, Ontario

"Mayer's Non-primifina Bavaria Blood . . . From the South German Market Journal, edited by member Leo Felitto.

Not long ago, a notice in horticultural papers created really a sensation. (Please see Quarterly, Vol. XVI, Summer 1958, Page 93, George Arend's priminfree Pr. obconica; Vol. XVIII, Summer 1960, page 83; and Vol. XVIII, Fall 1960, page 130.) Pr. Obconica is still today one of the most obliging and beloved flowering pot plants on the flower market.

Regrettably some people are very sensitive when coming in contact with this plant, often suffering with severe skin inflammations. Small wonder obconica's reputation was in disgrace, and all hospitals barred its admittance into patients' wards.

The firm of Robert Mayer in Bamberg (Germany), for 30 years the foremost grower of Pr. obconica, resolved to give the public a primula free of irritants (primin). Testing thousands of plants, some were found to contain smaller doses of primin. By continued selection, roguing, an almost primin-free Pr. obconica was produced, and if touched, did not cause any skin rash.

The new strain, nationally and internationally protected by plant law, is called "MAYER'S NONPRIMINA BAVARIA BLOO." Tests are continuing to insure a pure primin-free strain, coming true from seed, and to enlarge the colour scale.
Propagation of Primulas,
and some notes on *P. denticulata*

By T. C. Clare, Ascot Wood, Ascot, England

I have been reading Grace Dowling's articles on Primulas with great interest, and would like to add my own mite to her article on the Denticulata section.

First *P. cashmeriana*, which according to Farrer is only a form or hybrid of *P. denticulata* is a definite form, smaller in all its parts but of the same colour, pale lavender. The enclosed photographs of the two plants show the difference very well. *P. cashmeriana* is such an inferior plant that it can only be found in collections and botanical gardens. It flowers at the same time as *P. denticulata* and, as far as I know, there have been no improved colour varieties, as there have been in the former.

Now, as to colour; I confirm Mrs Dowling's statement that there is a good red. Prichard's Ruby, which was awarded an R.H.S. award of merit two or three years back, is a first class rosy coloured one, which exactly matched the Bengal Rose of the H.C.C., so we gave the plant that name.

There is also a very good named violet form; Taylor's Violet, which is probably a selection from the old Cambria strain.

Now for propagation. Primulas are generally propagated from seed; but not *P. denticulata* if you want a repetition of the parents' colour. It is a most variable plant, and a pod of seed will give a very pleasant mixture of colours, unless you have taken the seed from a group of the true species. Luckily, if one gets a nice form which one wishes to increase in a hurry there is a very simple method used by all nurserymen—here at any rate. Root cuttings, taken in the early spring when the plant is starting into active growth, is a very simple method of increasing a good form in a hurry. It is a very simple process. One lifts a good plant carefully; removes about half its thong roots, and with a really sharp knife, cuts them into roughly inch lengths. These are then laid horizontally in the propagating case, or box of sand, as the case may be; and treated like any other cutting. Each piece of root may produce several young plants, which if grown well, will produce a small flower the next spring.

This brings me to the main part of the title of this article. Propagation. Not nearly enough research has been done on the propagation of Primulas. Apart from
Concerning Primulas

GRACE DOWLING, Seattle, Washington

CHAPTER 7.

SIKKIMENSIS SECTION

All of this section is potentially friendly to gardeners, and most primula growers in every part of the United States have found the sikkimensis group entirely without inhibitions. Each member is perfectly hardy and generally perennial but there are a few, under some conditions, whose seed should be saved and planted every year.

The shapes of the corollas in the sikkimensis are distinctive and the seed pods are quite different in form from those of other sections. They do not differ, particularly, in their tastes from those of the great, general family; the same routine—good drainage, fairly rich soil, part shade and plenty of moisture, suits them under most circumstances. The Candelabra and Nivalis sections are supposed to be their nearest relatives but they have few, if any, visible-to-the-eye points in common with either of these two.

No gardener need avoid the Sikkimensis group as it is on the whole as non-tricky as any.

Primula Sikkimensis

"The Sikkim cowslip" is described by Mr. E. H. Wilson as growing as commonly in moist alpine meadows in Sikkim, China, as the cowslip grows in England. Moist is a very important word to P. sikkimensis, for if it has a wet soil, it sends up the most enchanting and graceful umbels of soft yellow, paler so if it has a wet soil, it sends up the most enchanting and graceful umbels of soft yellow, paler

The stems are tall, generally reaching from two to two and one half feet with some meal at the upper end, and they are often bent or twisted in a characteristic fashion giving the whole plant a distinctive rhythm. The leaves, from four to eight inches long, are without farina, delicate in texture and oblong-oval in shape, with sharp, tooth-like notches along the margins. The blossoms are sweetly fragrant and droop in a bell-like manner, each bloom opening wide and full, a clear, shiny color on the outside, but thickly covered with a frosty meal on the inside.

P. sikkimensis was one of the earliest introductions from the Himalayas and has been known and admired for many years. It is perfectly hardy but often it disappears after flowering, consequently seed should be planted frequently to keep up the supply of plants. Much seed is produced and it germinates easily, nevertheless the seedlings should be transplanted when they are only large enough to handle else they are prone to damp off. The individuality of the plants sometimes differs when grown from seeds, the constitution of some may be feeble, but there are generally many fine, sturdy ones which, in time, may be divided, even though division does not seem to suit them too well.

Seeds are the easier way to get a large planting.

The soft color of P. sikkimensis allows it to blend with all shades of primulas. It is a perfect choice when searching for a contrasting and harmonizing tone to use in a planting of the more difficult colors. It blooms in June along with many others from Sikkim, Yunnan, and other parts of China, and it is one of the most important of the whole tribe.

Primula Hopeana

In the report of the Primula Conference in 1923, P. Hopeana was listed as
"lost, probably, to cultivation", then imagine my delight and excitement to find it growing in Mrs. Berry's garden, not one plant but many, healthy and vigorous.

Primula secundiflora is a small edition of P. sikkimensis but with a rather woody root stalk and fibrous roots. The leaves taper into a longer stem, which is colored red at the lower end. The notches on the leaves are irregular and unduly, having a chewed appearance. The upward, slender stems are about twelve inches tall, carrying an umbel of from three to six creamy yellow, nodding flowers, covered with white meal.

It likes a sandy and peaty soil in bog conditions. These plants in Mrs. Berry's garden were grown from seed.

P. Wessa is an even smaller form, something like a miniature P. sikkimensis. It is growing in front of P. Hopeana.

One rainy, cold November day, Mrs. Berry and I walked around her garden with rubber couplings under our arms. When we came to P. Hopeana and P. Wessa we knelt down on our couplings to see the little greenish-yellow winter buds, poking their noses out of the brown earth. When these two little immigrants come into bloom in the spring the rosettes will be flatter, closer to the soil than those of P. sikkimensis. The blossoms will be much the same, a trifle smaller, and the stem not so tall.

Primula Florindae

At first sight, the lovely vitality of this marvelous plant is the main thing that impresses one, and the novice can scarcely be convinced it is a primula.

The plant itself, at second glance or even at third glance, does not recall the average primula in growth. P. Florindae looks rather like some fine perennial primula leaves, growing in a thick clump border. The leaves, dark green and P. Florindae rises, up to three feet and higher, stout and from this comparatively low growth which should be growing in the hardy even at second glance, does not recall the primula. and the novice can scarcely be convinced it is a primula.

The plant so vigorous as in wet places, how much dryness it will endure in my garden, and I shall try them again this year.

Primula Vittata

P. vittata and P. secundiflora are so closely alike that P. vittata scarcely needs a space by itself.

The primula probably gets its name from the Latin word vittate, meaning striped, as P. vittata has mealy stripes on its flowers similar to P. secundiflora. This is one of Mr. E. H. Wilson's introductions. He brought it from an area along the Tibetan border in 1905.

Perhaps the umbel of P. vittata is not quite so one-sided as that of P. secundiflora, but with a rather woody stem may not be quite as tall, and to some the distinguishing characteristic is the growth of the rosette, however for all garden purposes, only one may be grown. P. vittata's season of bloom reaches out through June with a few blooms often as late as September. A good rich loam, kept well saturated with water while the plant is growing, is a spot where P. vittata gives its very best.

Primula Waltonii

Here is another label standing alone in my garden. If all the labels marking primulas now gone, had been left where they were first placed there would be a miniature Field of Flanders. Why P. Waltonii slipped away is curious because it has an "easy" reputation and were I to slip away during the winter, and when it once finds the place it likes it will stay, developing crowns and seedling prolifically. Its preference is a moist, freely drained soil, with shade from mid-day sun. Here P. secundiflora, in June, more than repays for any trouble it may cause.

Primula Secundiflora

The word secundiflora, meaning a flower with a one-sided umbel, describes an important characteristic of this primula. It is surprising how seldom so lovely and easy a primula as P. secundiflora is seen in our gardens. It is very much like P. sikkimensis, a little less tall, but the flowers, instead of being yellow, are a beautiful shade of warm royal purple touched with a covering or bloom of red. The color has been called petunia color or it might be called fuchsia color; it is another of those indescribable shades which is the despair of the primula grower when he tries to describe them.

The delicately fragrant blooms have a heavy texture, each having a line of meal, making thin stripes of white, like veins, inside the bell. The leaves are glossy green, forming a rather flat rosette; they are fairly long, two to five inches, with fine teeth up and down the margins which are recurved. The young leaves have a coating of yellow meal on the underside.

P. secundiflora has much style, a thoroughbred in manner and form and every primula grower owes Mr. George Forrest a debt of gratitude for bringing this beauty from Yunnan. It is more dependable than P. sikkimensis, not so apt to slip away during the winter, and when it once finds the place it likes it will stay, developing crowns and seedling prolifically. Its preference is rough, freely drained soil, with shade from middle sun. Here P. secundiflora, in June, more than repays for any trouble it may cause.

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Mooreana blossoms set it apart of Primula Capitata. Denticulate blooms late in July and later, February, in favored spots. The flower head in sections Denticulate and Muscarioides.

The plant itself forms a large, tufty growth of smooth leaves about seven inches long and three inches wide, irregularly notched along the edges, the under sides scattered with yellow meal, sometimes more and sometimes less.

P. Waltonii grows along small streams in the alpine meadows in Tibet but in our gardens it likes much the same locations as the rest of the section, boggy soil full of peat and leaf mold. When I have it again I shall plant it near its relatives where the color will continue the picture into August.

CHAPTER 8.
CAPITATAE SECTION

Here, in the Capitatae section, are two of the most interesting and beautiful of all primulas, not the easiest in the world, yet they are not particularly difficult. These two outstanding varieties are P. capitata, the type plant of the section and P. Mooreana, truly the flower of the flock.

"Flowers of the capitulum pendant" is the description of the section stating an unfailing and diagnostic means of recognition. There are two sections nearly allied to section Capitatae, the sections Denticulata and Muscarioides, but the differences are considerable. Capitatae and Muscarioides sections have pendulous flowers. The flower head in the Capitatae section is round at the bottom, coming to a blunt apex, while in the Muscarioides the flower head is almost a spike pointed at the top. In the Denticulata section the flowers are in a spherical head, all pointing upward.

Another deciding factor; section Capitatae blooms late in July and later, while Denticulata blooms as early as February, in favored spots.

Primula Capitata

If for no other reason, the royal blue of P. capitata's blossoms set it apart for especial admiration. Like all the primulas in the Capitatae section, the flowers, as the name indicates, are gathered together in a closely bunched, flattened head. Before the first blossoms open there is no indication of the beauty to come. The tightly gathered cluster of buds at the top of a comparatively long, powdered stem is so covered with meal, there is every reason to think the flower will be white or gray. When the individual blooms begin to open at the lower end of the umbel each one is an astonishingly beautiful color and each is hanging down, like a little bell. The foliage of P. capitata grows in a neat and stylish rosette with the under side of the narrow leaves entirely covered with white farina. The upper sides of the leaves, faintly powdered, have an interesting quality suggesting some of the new rayon crepe materials. The flower stem rises to eight or ten inches in late July or August and the blooming period sometimes extends into November.

This is an Asiatic variety, found in Tibet and rather grudgingly reconciles itself to garden accommodations. It likes some sun if the soil is kept moist with peat and leafmold and will grow happily near a stream when the drainage is good. Generally, under the above conditions, it proves to be a perennial but if the soil is heavy or too moist, the crown rots. P. capitata should be treated as a biennial, saving seeds and raising new plants each year. When it is happy it seeds itself and the rosettes increase, but these should be divided often, else the plant may push itself out of the ground when too large for one root.

It grows well in the rock garden and, if not crowded, will often be content in a half-shady border.

P. sphaerocephala, a member of the section and so much like P. capitata that it is almost a duplicate, comes from China. The growth is more lush and tender, consequently the plant is not so hardy as P. capitata. This primula has been grown on Vancouver Island but most growers think it is not individual enough to fuss with.

Primula Mooreana

High in the list of must-haves, P. Mooreana is worth any trouble to keep it happy and contented in the garden, far from its home in the same parts of southwest China in which P. capitata lives. After collecting many adjectives describing its color, dark sapphire seems to express its vibrant tone most successfully. The bloom is much like P. capitata in form, and the leaves resemble those of P. capitata with possibly more prominent veins on the under sides, but the shade of the flower has a greater depth and gleam. The foliage is a soft, grayed green and in some situations, the meal does not seem as plentiful in P. Mooreana as in P. capitata; I find little difference in my plants. The powdered flower stem grows six or eight inches high and the season for blooming is late, from July, when there are the greatest number of blooms, far into autumn when small bouquets have been gathered late in October.

To dig away some of the soil from under the leaves in late summer and scatter a thick coating of coarse sand for the crown to rest upon during the winter is good technique. It is undoubtedly one of the varieties that have a tendency to die after flowering. To save seeds each year seems a safe course to take, but I have heard growers say they think that if allowed to set seed, P. Mooreana sometimes cannot recover from such an exertion. A few good plants may be allowed to set seed while others should be stripped of their flowers before seed pods are formed, to conserve the stock, if possible. I have it planted at the side of a shady woodland path in rich, well-drained loam.
CHAPTER 9.
MUSCARIOIDES SECTION

This section takes its name from its resemblance to the genus Muscari, the dainty little bulbous plants we call grape hyacinths. In both the muscarioides and the muscari, the umbels are more or less of a spike, a cone shape with the lower blossoms opening first, then gradually unfolding toward the apex. The Muscarioides section is much like the Capitatae section but the umbel in the last named is rounder in form and flatter on the top. The muscarioides are a little more difficult to manage than the capitatae; they do not willingly establish themselves in our gardens, generally dying after flowering. Consequently, they should be treated as biennials, saving seeds each year and raising new plants to take the place of those that have disappeared.

The seed is not too plentiful but generally it germinates readily and the seedlings come through without casualties.

They all come from western China from the high Himalayas, growing well in any rich, sandy soil which is very moist and perfectly drained. Half shade is necessary. A wet woodland, a stream side or a shady primula border generally suits them.

Primula Littoniana (P. Viali)

The casual visitor to my garden often wonders why I have a group of kniphofia in my Asiatic primrose border, and it is not surprising that these Red Hot Poker-like plants confuse the person not conversant with this primula section. P. Littoniana has spikes very much the shape of grape hyacinths spikes only much larger and of an astonishing color. The tightly folded buds are a flaming scarlet, and then, as each flower opens from the bottom of the spike upward, they show a deep violet. This gorgeous oriental combination of colors is sensational, but not offending. I have never had a planting large enough to get the effect I wish to create and I have never seen one of massive proportions, however it is impossible to acquire.

The plants are late appearing in the spring, but at last they send up pale green, velvet shoots which develop into long, hairy, pointed leaves, four to eight inches long, the kind which do not well stand a wet winter and the kind which are almost too lush to hold themselves up-standing all summer.

There are two forms of P. Littoniana, the type form, whose flower stem reaches about fourteen inches and a variety P. L. robusta, somewhat over two feet high. This fairly slender but sturdy stem is covered with a white meal and is terminated by a spike five to six inches long with drooping flowers.

P. Littoniana came from alpine meadows in Yunan in 1908 and is another of Mr. George Forrest's finds. It is not difficult to grow but I have not found it easy to keep. Perhaps it is the drip from my many trees. It is supposed to prefer light sandy soil and it should be happy here. Some day I hope to have

P. Viali . . . Photo by Leo Jelitto

P. Littoniana.

Its one bloom for me came early in the spring, after almost all the primulas are blooming. It is another primula that may die after flowering. The flowering season extends all throughout the summer from July until September. Sometimes waiting to blossom until the third year, letting the root system become more fully developed, it has a longer life. To complicate matters, seeds are not formed easily and hand pollination is necessary. To quote Mr. Farrer again, "its strange appearance upsets the insects and they pass it by."

There is a new variety with a brick red color that is thought to be more perennial, called P. L. Viali.

Primula Menziesiana

This, "one of the most charming of the series," stayed with me only long enough to say "I have had it" and then went the way of many primulas. However, it remained long enough to let me see its blossom and for that I am grateful.

It is tiny, only growing about three inches tall with a spike of bloom an inch or less across. The blooms were an unusually beautiful blue with only a touch of purple and each tiny blossom pointed straight out like a lifted bugle, instead of drooping. The white eye in each blossom gave the whole spike an unusual appearance. It grew, originally, in the high Himalayas, high up, 15,000 feet above sea level among moist rocks. In cultivation it likes, I've been told, peat and this delicate flower from Yunnan and it has been one of my particular joys for all members of the section come from high altitudes in Tibet, China and Siam; all are greater or less enigmas to the gardener. In varying degrees they refuse to be cultivated and tax the ingenuity of any one who attempts to make them happy.

Primula Giraldiana

A little jewel with a pretty girlish name, P. Giraldiana, while very pleasing, has the same unhappy practice as other members of the section of disappearing after blooming. It never grows over six or eight inches tall in my garden and reminds one of a miniature P. Littoniana. It appears rather later in the spring than most primulas and generally has seeded itself in the most unheard of places, along the path edges, in sun or shade and almost under the leaves of surrounding plants.

It lacks all traces of farina on stem or leaves and is said to so much resemble the type plant of the section, P. muscarioides, that when it was first introduced by Bees, Ltd., it came in under the name of P. muscarioides.

P. Giraldiana blossoms in July with a bluish-purple bloom coming on stiff stems from a simple, tidy little rosette of hairy leaves. It is a charming member of the tribe and has been more agreeable with me than many.

CHAPTER 10.

SOLDANELLOIDEAE SECTION

The sections Soldanelloideae and Muscarioides are often confused in spite of the fact that when their differences are known they may be easily recognized. The flower umbel is not so much of a spike in the Soldanelloideae section as in the Muscarioides section and the individual flowers differ. Here in the Soldanelloideae the corolla is bell-shaped with a comparatively short tube. The resemblance of some members of the section to the Soldanellas (an entirely different genus of the Primulaceae family) is easily recognized in the illustration of P. eburnea and this similarity is the reason for the section's name.

All members of the section come from high altitudes in Tibet, China and Siam; all are greater or less enigmas to the gardener. In varying degrees they refuse to be cultivated and tax the ingenuity of any one who attempts to make them happy.

Primula Nutans

In 1915 Mr. George Forrest brought this delicate flower from Yunnan and it has been one of my particular joys for the last ten years. It apparently approves of my woods as a dwelling place, sometimes blooming the first year from seedlings, again at times waiting to bloom
until the second year. The woolly foliage indicates its distaste for water on its leaves and the resting bud is open enough to let the rain stand in the crown, often destroying it completely in exceptionally wet winters. Generally I put a number of plants in the cold frame to spend the winter, but a part of the planting in the woods is covered with a light frame made of a cellophane glass material, about six by four feet in size. This frame may not entirely cover the bed, and strange to say, frequently the ones outside in the rain and wet have come through the winter with as much vigor as the ones carefully covered with the material, which is supposed to allow health-giving rays to seep through to the plants under it. Always I save seeds, sowing some as soon as ripe and again in the spring. In that way there are new plants to continue the planting. I have never found P. nutans difficult and I have placed it in many different locations. Perhaps the finest plants are in half-shade in a peaty, sandy soil. The rosette is rather meager and as the growth starts comparatively late in the spring, no division or transplanting is attempted until the plant is well above ground. From my experience I should never consider it a perennial in the strict sense of the word, but some plants, not many, have blossomed for two years in succession. The plants that wait to blossom in the second year are more husky than the first year plants and give more blooms.

The plant of P. Nutans is charming with no blooms. The leaves, which on a well-grown plant will reach eight inches, are velvety and the soft gray-green color which is produced by all leaves which have a thick covering of fine hairs. The rosette has poise and style and the flowers rise above the leaves with much the same juicy appearance, thickly covered, as are they, with white meal sifted through the umbel. The stem, in a sym pathetic environment, will reach twenty-four inches, and the upper part is covered with farina. The spike or umbel has an interesting shape, rather reminiscent of the Chinese pagoda. The buds before they open are described as bronze color, and the upper part is cov ered with farina. The spike or umbel is produced by all leaves which have a thick covering of fine hairs. The buds before they open are described as bronze color, and the upper part is covered with farina. The spike or umbel has an interesting shape, rather reminiscent of the Chinese pagoda.

It comes from glacial moraines high in the Himalaya Mountains. The leaves are deeply veined and covered with long white hairs above and below. The flower stems, from four to five inches tall, veiled with white meal, support the blooms which are ivory white, in an umbel composed of rather few blooms, generally four or five, seldom as many as ten. It seldom sets seeds unless hand pollinized. It should not be content. It is quite worthy of several attempts to make it blossom.

Primula Reidii

Primula growers know no better game than the one of exchanging experiences, of discussing their successes and failures. One year a gardening friend accompanied me on a "primula journey" to Vancouver Island. She is an enthusiastic gardener but primulas are not her only passion. During the conversations, as we went from one grower to another someone was sure to ask "Have you Reidii?" And the person questioned sadly answered, "I had it but I lost it." At the next garden there was the same question and the same answer and this went on, quite unconsciously among the primula growers, all day long. The twinkle in my friend's eye was not in keeping with the sorrow in the grower's eye. On the way home she asked, "Why did you choose primulas for your idol?" I often wonder. I have never attempted to grow P. Reidii so I have been saved the grief of losing it. But everyone who has grown it invariably says it repays all the trouble taken to make it bloom. It has bloomed in Victoria after having spent the winter in the open and even the memory of its exceptional beauty makes the eyes smart with tears.

It is included in this list to show that it can be grown, if not as a perennial then as a biennial, and Mrs. Berry has had numbers of seedlings. However at this time there is only one left. The fact that there is still one in existence is worth knowing and may be an impetus for growers, who hungeringly long for it. Mr. Farrer says it is "not only one of the loveliest jewels of the race but in the world" and "as hard to keep as love." Few experts succeed with it; it is a spoiled beauty, having no faith in mankind.

It comes from glacial moraines high in the Himalaya Mountains. The leaves are deeply veined and covered with long white hairs above and below. The flower stems, from four to five inches tall, veiled with white meal, support the blooms which are ivory white, in an umbel composed of rather few blooms, generally four or five, seldom as many as ten. It seldom sets seeds unless hand pollinized. It should not be content. It is quite worthy of several attempts to make it blossom.

Primula Wattii

This primula, rare in cultivation, was like a little refugee where I saw it in an alpine house while traveling to adjourn its life to its new home, far from its native habitat in China. It grows high in the mountains on mossy banks or wet rocks where there is no doubt that it will live to produce its purple blooms, purple with a white eye, the petals notched at the tip and the blossoms drooping. The buds before they open are described as bronze color, and the full blooms will come in July and August.

It is a tiny thing at best, its leaves only...
reach from one-half to three-fourths of an inch, and while not very hairy on the side they are densely covered with hairs underneath.

P. Wattii, until better understood, should perhaps always be grown in an alpine house in the special mixture of soil and limestone chips described in the chapter on propagation. It invariably dies after blooming and setting seeds.

**Primula Eburnea**

The photograph of P. eburnea gives more of an idea of its characteristics than a detailed description. Originally this primula was found in Bhutan at fourteen thousand feet and more above sea level, growing in glacial debris along alpine streams.

It seems rather presumptuous to ask a plant to adapt itself to sea level conditions after living for centuries at such an altitude, but here it is giving its very beautiful self to be admired by most appreciative observers.

The name of the primula, P. eburnea, comes from a Latin word meaning ivory and the fringed blooms are a warm ivory white, very beautiful and unusual. The leaves are from one to four inches long, prettily notched and scantily powdered with meal.

It must have limestone chips in the soil and, needless to say, a situation in an alpine house where it can be given the care and invalid conditions necessary to so precious a species.

**Primula Cawdoriana**

Another species in this group is P. Cawdoriana, trying its best to adapt itself to situations here on the Pacific Coast, across an ocean from its native aerie quite as lofty as that of P. eburnea. Last year it bloomed in England for the first time, and it is exciting to know there is another about to bloom in this section of the country. The leaves, not quite two inches in length, are notched with obtuse teeth, which in turn have a fringe of fine hairs. Both front and back surfaces of the leaves are covered with a downy growth, giving the leaves a velvety, grayish appearance.

The blossoms are described as purple, a shade more blue than red, with five blunt, notched lobes around the edge of the corolla. It is expected to bloom in June and July. It too, is kept in a very special place in the alpine house, in a limey soil scientifically chosen and mixed.

**CHAPTER 11.**

**NIVALIS SECTION**

Here is a large section which has many outstanding primulas including many of the American species. The name, nivalis, meaning snow, indicates that most of them are found in high mountainous, snowy areas.

The group as a whole is not easy, perhaps easier than some, but more difficult than many. In the report of the Fourth Primula Conference it was reported “i have flowered in cultivation, only to disappear.” Mr. E. H. M. Cox in New Flora and Silva, about ten years ago, said of the whole Nivalis section “give plants rich food and grow them on as fast as possible without thought of immediate flower. Only other assistance is glass protection in winter. If they do not flower the second year from seed all the better as they are then more likely to make multiple crowns and so may prove more permanent than if they expended their energy in flowering and striving to set seed from a single crown.”

They like much moisture in summer to keep their leaves upright and well growing, but the crowns must be kept from rotting in winter. Sharp building sand and fine sand stone chips placed around the crowns in late fall with the protection of a pane of glass over them will generally bring the majority through the winter.

They are often listed as biennials and while many gardeners are learning to keep them growing for a few years, saving seeds and planting them each year is the safest method. The Nivalis section has many members that have a strong tendency to give up trying to grow after flowering. It has always been considered so difficult a section that most primula growers have avoided it, thinking it not worth the trouble and heartaches it has inflicted. Hoping to destroy this fear to some extent, I have chosen more of this section than seems justifiable in this little book. All of the Nivalids I have described I have seen growing, most of them happily; some too young to know what old age may bring, but all with great promise. By diligently searching for seeds, the somewhat advanced primula grower may have every reason to hope for success and rewards.

**Primula Chionantha**

Of all my primula problems and there have been many, a few year after year lure me on, searching for a solution. The beauty of P. chionantha as a whole, its elegance and style, and the superb stalk of blooms it produces are sufficient mo-
a successful technique for *P. chionantha* or at least in many gardens *P. chionantha* stays and increases. Nevertheless, these same attentions in other gardens do not have the same consequences. Rich food, protection from wet in winter with time to let the plant get well started before flowering are the only rules generally necessary; however, at times there seems to be something else, something hard to discover. It blooms in April and May, with a few blossoms in June and often flowers appear again in autumn.

As seeds are not really abundant, flowers should be hand-pollinated and it is almost hopeless to find seeds if there is only one plant in the garden. Nevertheless, seeds germinate easily and plants may be divided when several crowns are produced.

It is interesting when planted with other members of the section, but they, the other members, are even less dependable than *P. chionantha* and picture making with them is provisional and uncertain. *P. chionantha* is quite too exquisite to plant near the candelabras which begin to blossom while it is still blooming. It is especially uncertain. *P. chionantha* may be divided when several crowns are grown, the plant may be divided.

**Primula Sinopurpurea**

Many of the Nivalis section have a tendency to die young, especially those in cultivation and *P. sinopurpurea* is not an exception. The description “not long lived but hardy” may seem paradoxical, but winter cold is probably not the reason why it may disappear during its youth. It has its own peculiarities and mannerisms not understood by the average primula grower, I know three people that have grown it but only one who has been able to keep a planting of it for any length of time. In this planting, plants, no doubt in middle life, are planted in a deeply prepared soil in a raised bed of loam, leafmold, sand and a large proportion of stone chips. The whole top of the soil is covered with chips not much bigger than navy beans. This is a bed where many “tricky” varieties are raised; those that hate wet winter have a pane of glass to cover them. The glass is held by a bent wire device made from a pane of wire coat hangers that collect in such quantities from the laundries and dry cleaners. These glasses give the bed an interesting and loving aspect, a place where everything possible has been done for the health and comfort of the plants.

The leaves of *P. sinopurpurea* are distinctive, being more pointed than *P. chionantha* and the under sides are sparingly covered with yellow meal. The flower stem, also with more or less meal, sparingly covered with yellow meal. The and the under sides are distinctive, being more pointed than *P. chionantha*. Nevertheless, seeds germinate easily and plants may be divided when several crowns are produced.

The rather thin leaves make a rosette, exquisite in form and color. Bright-green, rather oval leaves, about four or five inches long, stand up sturdily showing the backs covered with a golden-fellow meal. Each leaf, somewhat fluted and with minute notches, narrows to a slender stalk. From this vase-like base rise up stems from six to ten or twelve inches tall topped by a many-flowered umbel of violet colored flowers with yellow eyes, fragrant and altogether satisfying. It blooms in June.

This, like many of its family, came quite recently in 1908, from Yunnan where it grows in shade or sun, in dry limestony meadows ten to fifteen thousand feet high in the mountains, where the water from the melting snows soaks the soil under its feet all summer long.

Seeds may surely be found eventually by inquiring in England and Switzerland and then after one or two plants have blossomed, seeds may be collected.

**Primula Pulchelloides**

Growing next to *P. pulchella*, *P. pulchelloides* suffers a little by comparison. If grown by itself it would be more arresting in its appeal. The plant is much like “Pretty Little” with leaves a trifle thicker, with not so much meal, with the leaf stalk not as perceptible, but with perhaps sharper teeth along the leaf edges.

The flower umbel has not the style nor compactness of *P. pulchella*. The flower stem is generally taller with a little less meal and the flowers themselves, paler in color and floppy, have a yellow or orange eye. The blooms vary noticeably when raised from seeds. Many poor in form and substance, which only magnifies the beauty of the good ones. The flowering period is somewhat longer than that of *P. pulchella*, beginning to bloom in June and continuing through July into August.

From Northwest Yunnan, it is a newer introduction than *P. pulchella*, coming in 1911. It should be treated with the same consideration as *P. pulchella* and the same technique for preparing its diet seems to be satisfactory.

**Primula Elongata**

Long confused with a purple series of Nivalis the primula conference finally have definitely placed *P. elongata* in a series of yellow-flowered primulas along with *P. Stuartii*.

It is not unlike *P. sikkimensis* but there is no near relation between them. When I saw it growing, apparently quite at home, I was quite recently and the same technique for preparing *P. Stuartii* and some American species.

It is a handsome perennial with leaves three to five inches long, each with a stem of its own. The leaves have rather large notches along the margins and while the upper side of the leaf is smooth the under side often has traces of meal. The dormant buds are usually covered with meal. One of the interesting characteristics of deciduous primulas is the resting bud. Sometimes it is fat and round, sometimes slender and pointed, often covered with yellow or white meal. These miniature rosettes are apparently tightly folded in winter but are open enough to allow water to seep into the crevices of the bud leaves and as there is no outlet the water stays, becoming stagnant, and rots the plant. A pane of glass raised from six to twelve inches over the dormant buds keeps the rain off and allows other water to evaporate when the warm sun shines through the glass.

The leaves of *P. sinoplantagina* are somewhat broader and with a thicker coat of meal. If possible, new plants should be raised every year and older plants should be transplanted in spring only.
The description of *P. elongata* sounds much like the description of *P. sikkimensis*, a tall, slim stem, six to nine inches high with an umbel of five to eight flowers; but each individual flower has no stem to speak of, thus forming a tight umbel of flowers, each with a fairly long stem. The flowers of *P. elongata* have a much longer tube than *P. sikkimensis*, another discriminating indication.

It grows in damp, half shade high in the mountains of Sikkim. It will be fairly comfortable in a good, rather heavy loam with limestone chips in the soil.

**Primula Stuartii**

Long it was thought that the name of *P. Stuartii* had been given to a purple primula but even though it was introduced to this country in 1845 it has only recently been decided that *P. Stuartii* belongs to a series of yellow primulas from Sikkim, the same group where *P. elongata* has been placed.

It is an outstanding primula of great beauty. The flowers, a real primrose yellow, grow on stems nine to twelve inches tall. The concave face of the corolla is nearly, if not quite, an inch across and nearly, if not quite, an inch across and nearly, if not quite, an inch across and nearly, if not quite, an inch across and nearly, if not quite, an inch across and nearly, if not quite, an inch across and nearly, if not quite, an inch across and nearly, if not quite, an inch across and nearly, if not quite, an inch across and nearly, if not quite, an inch across and nearly, if not quite, an inch across and nearly, if not quite, an inch across and nearly, if not quite, an inch across and nearly, if not quite, an inch across and nearly, if not quite, an inch across and nearly, if not quite, an inch across. It blooms in June and July. Each separate flower is a tall, slim stem, six to nine inches high with an umbel of five to eight flowers; but each individual flower has no stem to speak of, thus forming a tight umbel of flowers, each with a fairly long stem. The flowers of *P. elongata* have a much longer tube than *P. sikkimensis*, another discriminating indication.

**Primula Leucochnoa**

The name is probably taken from a Greek word meaning white or whitish and may indicate the white form was first discovered. *P. leucochnoa* has purple blossoms on tall, eight to twelve inch stems, forming an umbel, each flower on a down-curved stalk covered with white meal. The corolla is distinctive in that the edges are fringed with tiny glandular hairs. The leaves are rather different from most of the section. They are perennial, thick, somewhat ruffled, pointed and four to six inches long. The undersides are covered with a white farine but the upper sides show no signs of meal.

It is one of the most difficult of all primulas, only growing and blossoming for a few. When, if ever, it blooms it is at the same time as *P. Stuartii*, in June and July in rich, leafmoldy soil with plenty of powdered limestone about. In its native home in China it grows in the mountains as high as eleven thousand feet. Is it a wonder it finds it hard to come down to sea level and prosper?

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