

BULLETIN
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AMERICAN ROCK GARDEN SOCIETY

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No. 2

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THE FASCINATION OF ROCK GARDENING

DR. LLOYD P. GRAY, Clayton, New York

GARDEN enthusiasm may be infectious, but over-enthusiasm is apt to be boring. Hence, in writing of the fascination of rock gardening, it becomes necessary to use some restraint. But to me, no other form of gardening is so exciting. Even before the snow has melted completely in the spring, we find the grass-like foliage of *Iris reticulata* pushing up through the white blanket and *Eranthis* getting ready to give forth its cheerful yellow blossoms the moment the snow has gone. With the proper selection of plant material, we can enjoy a succession of blossoms until the snows of December cover *Hellebore* once more. Even when not in flower, the plants themselves are interesting because of their growth habits and decorative foliage.

Rock gardening combines both art and science and, therefore, is satisfying to the creative urge that most of us possess. There is a tremendous wealth of interesting plant material to draw upon and we can spend a lifetime at rock gardening without exhausting its possibilities.

It is not necessary to grow the more difficult plants, in order to achieve an interesting and pleasing effect. Doubtless, many gardeners have been discouraged from attempting a rock garden by reading about the "miffy" character of some of the plants and their insistence upon certain soil requirements. As a matter of fact, many rock garden plants will do well in any good garden soil with plenty of drainage. Lime can be added for the calciphiles and peat moss for those requiring an acid reaction. Once, one has experienced the thrill that comes from rock gardening, he will most certainly go to some pains to provide a suitable environment for those plants which are more exacting in their requirements.

We must become familiar with the growth habits of the plants we use or unwanted effects may be achieved. Autumn Crocus gives us a most desirable flower in the autumn, but we should not forget the rather rank and untidy growth that it makes in the spring, when it sends up its seed pod. Otherwise, it may fall over some cherished plant in front of it. *Plumbago larpentiae* or, should I say, *Ceratostigma plumbaginoides*, produces much needed blue flowers late in the season, and the foliage turns various shades of red. However, it is a rampant grower, spreading by long, wiry, underground runners that will even grow right through soft stones, making it very difficult to restrain or eradicate. The inexperienced should also be cautioned about the Sedums, which not only spread rapidly but volunteer all over the place as well. In a small rock garden, I should limit myself to *Sedum sieboldii*, possibly admitting *S. middendorffianum* for the reddish cast of its foliage. *Euphorbia myrsinites* is another plant with decorative, light green foliage that is effective in certain respects, but must be planted where it can grow forward without covering up other things.

Next, we must study the color of our flowers in order to produce harmony and contrast. Many of the rock garden and alpine plants have large



Photo by Walter Kolaga
Saxifraga macnabiana

cordifolia (*Bergenia cordifolia*), the blue of *Pulmonaria angustifolia* and the blue and white of *Omphalodes verna*. The latter part of April, the parade of the Primulas begins and then my excitement grows, for the Primulas are among my favorite flowers. If one lives in these colder regions, he can enjoy a succession of them throughout the season. One of the first to bloom is *Primula heleniae*. Its velvety, burgundy-red is a welcomed addition to the color scheme, appearing while the blues of *Scilla* and *Chionodoxa* are still in effect. *P. heleniae* is followed very shortly by *P. denticulata* and later by *P. sieboldii*, which is one of the loveliest of them all. Along with the Primulas comes *Anemone pulsatilla*, which sends up its delicate lilac-lavender flower out of a downy mat, before the leaves have made any growth. Then, the green cushions of *Draba* turn bright yellow and very soon *Iris pumila* blossoms.

Thereafter, until well into Summer, things happen so thick and fast that it is difficult to give a chronological account. It is almost like watching a color organ, as the emphasis shifts from one group to another. As the early Primulas wane, the Violas come along with their solid, saturated colors. A long list of dwarf Veronicas add their blue, white and pink to the picture. Dianthi, Campanulas and Helianthemums lend their blossoms in late spring and early summer. Since plants that flower all summer are at a premium, special mention should be made of *Papaver alpinum*. This is a delightfully delicate, miniature Poppy with white, pink, yellow and orange flowers, some of which are deeply fringed. Two other plants which bloom all summer in shady spots and are excellent associates are *Corydalis lutea* and *Dicentra eximia*. If the scale of the garden is large

flowers of vivid colors, although some produce rather inconspicuous flowers and are grown mainly for their foliage, as *Eriogonum ovalifolium*. Color combinations in flowers are, to some extent, a matter of taste, so it is difficult to give definite rules. Some gardeners feel that flowers of all colors go well together, even boast of a "riot of color" in their gardens. Personally, I prefer a "symphony" with design, harmony and contrast. Being partial to solid, saturated colors, I prefer, for example, the yellow of *Primula vulgaris* to the larger "calico" colors of the Polyanthus hybrids. Again, the form of flowers is largely a matter of personal preference. Although not over-fond of the "daisy-like" blossoms, I would not dispense with the deep yellow of *Doronicum clusii* which blooms in late April, after the Crocus is gone and yellow is so needed. The dwarf Asters are also needed for autumn bloom.

Spring is the most exciting time in the rock garden, as in gardens in general. *Eranthis* and *Iris reticulata* are followed by other small spring flowering bulbs. While these are still flowering, along come the pink blossoms of *Saxifraga*

enough to admit it, *Campanula rotundifolia* in close proximity, even though it does not bloom after midsummer, adds a blue that harmonizes with the yellow and the pink of the other two.

The propagation of rock garden plants, whether by seed, cutting or division, is another phase of the work that is both fascinating and personally satisfying. It is also an economical means of obtaining a large number of plants. Very seldom do we want a single specimen. Often large colonies are desired and to buy them from a nursery would be somewhat expensive. Again, considerable study is required if one is to succeed. Some plants come from seed as readily as radishes, while others are extremely difficult and exacting in their requirements and may take a year or more to germinate. Likewise, when propagating vegetatively, some cuttings root very readily, while others are slow and difficult. Some plants divide with ease, practically falling apart, and others must be torn or cut into pieces.

If one does his own propagating, he can be assured of a constant supply of vigorous plants. Plants, like any other living thing, vary in vitality and longevity. As a rule, young, vigorous plants produce more bloom than do old ones. Again, some become so leggy, as *Alyssum saxatile* and *Iberis sempervirens*, that it is often better to replace with new plants than to attempt to shear back or prune.

Sooner or later, most rock gardeners want an alpine house or at least an alpine pit, so that they may grow the more difficult Androsaces, Saxifrages and others. If the chief interest is collecting rather than achieving an artistic effect, a life-time could be devoted to Gentians, Primulas or Saxifrages without exhausting the field. So I repeat, no other branch of gardening is as fascinating as rock gardening. It satisfies the artistic, creative and acquisitive instincts, as well as scientific interests.



Photo by Maxcine Williams

Campanula rotundifolia var. *petiolata*

NOTES ON RARE PRIMULAS

EDITOR'S NOTE. *The following material is based upon the notes prepared by Mrs. A. C. U. Berry, of Portland, Ore., and Mrs. Florence Levy, of Gresham, Ore., to accompany Mrs. Berry's collection of slides of rare and unusual Primulas, which was shown before the North Atlantic Group.*

GROWING Primulas, says Mrs. Berry, can be one of the most heart-breaking experiences a gardener can have. This does not apply, of course, to the ordinary Polyanthus, Julianas, or Auriculas—though the edged and show varieties of the latter can give plenty of trouble,—nor to the European species and hybrids—though they do not always bloom freely. It seems necessary for them to have a really cold winter to bloom well and that seldom occurs in Oregon. But with the rarer Asiatic—and even more so, the American species—then troubles begin and are never over. Drainage is the first and foremost necessity—not just adequate, but perfect drainage. Methods employed successfully in English or Scottish gardens can not be exactly followed with any assurance of success. For instance, Portland summers are hotter and drier so that “full sunshine” in England may even mean full shade in Portland.

Of the American species, *P. ellisae* blooms regularly but does not seed; *P. suffrutescens* is doing nicely in Mrs. Berry's garden, after a very chequered career; and *P. specuicola* has bloomed twice but does not seem reliably perennial.

Primula cusickiana from the Wallowa Mountains, a perfect little beauty with heavenly perfume, is a heartbreaker, indeed, in Mrs. Berry's estimation. She believes that her lack of success can be laid to not giving it the complete resting period in Summer to which it is accustomed in its native haunts. This spring should tell whether Mrs. Berry is correct in her surmise, as she collected seed again last spring and provided for a dormant period. Incidentally, Mrs. Berry was informed by a man in the Wallowas that it takes at least five years for *P. cusickiana* to reach blooming stage from seed. Though she does not know his authority for this statement, she is inclined to accept it—from the way *P. cusickiana* acts.

Primula cuneifolia recently came to Mrs. Berry from Alaska, with its fat buds intact, and she looks forward to flowering it this spring. The rosettes are reminiscent of *P. minima* which, by the way, she succeeded in



Photo by Maxcine Williams

Primula cuneifolia var *saxifragifolia*



Photo by Alfred A. Monner

Primula marginata var. Linda Pope

flowering only once (spring 1947) after decades of successful establishment. However hybrids, showing a strong strain of *P. minima* blood—noted in the miniature wedge-shaped, apically toothed leaves—bloom luxuriantly.

EUROPEAN ALPINE PRIMULAS

Primula hirsuta. This beautiful and variable species, ranging in color from white, pale pink, rose, lavender to deeper shades, is one of the parents of the modern Auricula. Native to European alpine situations—from the Pyrenees east to the Austrian and Dolomite Alps—*P. hirsuta* has been in cultivation since the eighteenth century. The albino form is one of the loveliest of all the European alpine Primulas; unfortunately, it is now out of commerce.

Primula marginata. The beauty of its foliage alone makes *P. marginata* a valuable rock garden plant but, in addition, its early flowers give off a delightful scent. Their color forms vary from pink through lavender to almost blue. *P. marginata* grows abundantly in nature in but few localities—in rather restricted stations in the Maritime and Cottian Alps from 2,500 to 7 and 8,000 feet. It is found in limestone as well as other formations. In cultivation since 1777, *P. marginata* multiplies readily from seeds, cuttings and divisions, but it is advisable to grow this Primula in a frame or pot to keep the meal from washing in the rain. A named variety long in cultivation in England and much sought here and abroad because of its beautiful, sweetly scented flowers, is *P. marginata* var. Linda Pope. Opinions concur that it is a cross between *P. marginata* and *P. auricula*.

Primula glaucescens. While the majority of alpine Primulas like more open sunny positions or rock crevices, this species makes wide cushions in and out of the bushes in the Alps. The color tone may vary, but its disposition always remains sanguine in partial shade and abundant summer moisture.

Primula carniolica. One of the rare Primulas, *P. carniolica* is confined



Photo by Walter Kolaga

Primula denticulata

treatment appears to be satisfactory, as it comes easily from seed. The *farinosa* group is the most widely scattered and largest of the genus.

VERNALES

Primula amoena. The Purple Oxlip of the Caucasus was introduced to English gardens in 1831. Later, it became lost through erroneous nomenclature, when *P. sieboldii* was often listed as *P. amoena*. In June and July 1935, W. E. Th. Ingwersen found it blooming at the edge of permanent snow near his shelter hut on Mt. Elbrus. It is now almost extinct in cultivation, although some propagation is being carried on in this country. While it is difficult to raise from seed, *P. amoena* is otherwise easily grown in the northwest.

Primula sibthorpii, the Levantine Primrose, indigenous to mountains of Turkey, Greece, Armenia and Caucasus, was brought to England during Elizabeth's reign and was known then as the "Turkie Primrose." Its color range is from pale pink to purple and figures in the colored *P. acaulis*, especially in the pinks, reds, blues, and purples. *P. sibthorpii* blooms very early, often with melting snow.

The first blue Primrose (blue *acaulis*) or what could legitimately be called blue, was produced in 1890 by Mr. G. F. Wilson, of Wisley, England, after at least twelve years of selection. A purple *P. sibthorpii* inclining to violet was the original plant from which Mr. Wilson evolved his blue. Since then the blues have been improved as to trueness, range of shades and stability of color. The fall, winter and early spring blooming tendency is directly associated with the Levantine Primrose.

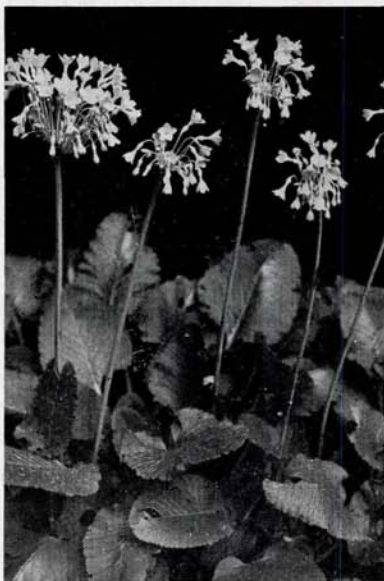


Photo by W. C. Blasdale

Primula florindae

AMERICANS

Primula cusickiana. Native to the Wallowa Mountains, of Oregon, which

to a few hill-tops in the Idrian Alps, just north of Trieste. In its native hills, it grows frail and straggly in the moss and on damp rocks beneath the dense shade of Firs. In cultivation, it proves amiable and adaptable to cool, rich soil. While it has long been in cultivation in English gardens, *P. carniolica* is practically unknown to American gardens.

Primula farinosa. The old English and Scotch Birds-eye Primrose clothes embankments and crowds grassy slopes, but is rather difficult to keep in the garden. Biennial

are said to resemble the Swiss Alps to a marked degree, *P. cusickiana* is a very beautiful, very fragrant, very difficult plant. About seven years are required to bring it to flower from seed. It wants to go entirely dormant in summer, which makes it hard to keep in the Pacific northwest. Unfortunately, this native *Primula* is rapidly disappearing from the Wallows because of grazing sheep.

Primula ellisae. Dr. Carleton R. Worth, of Groton, N. Y., has collected *P. ellisae* a number of times from isolated, windswept peaks in the New Mexico desert at elevations of nearly 12,000 feet. He states that it comes promptly and profusely from seed and is a fairly permanent resident with a moderate amount of skilful handling.

ASIATICS

P. poissonii. This *Primula* was collected in 1882 by Delavay near Lake Tali in Yunnan. It is one of the few evergreen candelabras with peculiar glabrous leaves which, Farrer says, "are flaccid and unpleasant as a corpse's fingers." It can be grown in the east in moist, cool situations.

Primula scapigera. In 1934, the late G. H. Dalrymple, of Bartley Nurseries, England, introduced *P. scapigera* into cultivation. He received the seed from an English army officer, who had discovered it in Sikkim where it grows abundantly at altitudes from 7, to 10,000 feet. It is a *Primula* of real beauty for cool, moist pockets of the rock garden; an easy winter-blooming species remarkable for quick propagation by leaf cuttings taken in late spring—using the older leaves.

Primula winterei. Now known as *P. edgeworthii*, this species is of the same section as the preceding but does not take kindly to water lodging

in the crown, after the buds form in early fall. After bud formation, the plant heads over like lettuce and overhead protection is then necessary to prevent bud rot which spreads to crown rot. This glorious plant, which was introduced in 1910 from southern slopes of the Himalayas, at 9 to 12,000 feet elevation, manifests a desire to bloom before snow has disappeared.

Primula sieboldii. Mrs. Ber-

ry dubs plants of this *Primula* "pot boilers", as they require neither time nor care to flourish. They are ideal for eastern gardens as they have a period of semi-dormancy in summer. Described in England in 1873, *P. sieboldii* was in cultivation there for some time prior to that year. It



Primula cusickiana

Photo by J. G. Bacher

is a plant of great variation with apparently no hybrids. In the late nineteenth century, scores of named varieties were exhibited at shows of the Royal Horticultural Society, under the name of *P. amoena*.

Primula littoniana. This is an unusual species from the mountains of Yunnan, where it blooms like tapers in the lush grasses. The scarlet buds give way to bluish-lavender blossoms as the season advances and this characteristic, together with the sulphur powdered stalks, is not unlike a flame. It is difficult to handle except under the coolest possible conditions in almost full shade and a gritty, leafmoldy, always moist soil.

Primula rosea grandiflora. Of a brilliant carmine-rose, this is one of the best known and most willing species, thriving in cool heavy soil or rocky situations with practically continuous water supply. It is almost impossible to germinate seeds more than several months old without taking special measures. However, seedlings readily self sow and this method of increase, together with division of clumps, will produce a good-sized colony quickly. Endemic to the Himalayas from Tibet to Kashmir and as far west as Afghanistan at elevations up to 12,000 feet, *P. rosea grandiflora* was introduced into cultivation in 1897.

Primula denticulata. An old favorite among *Primula* growers, this plant succeeds in thin woodland, the rock garden or the border, asking only moisture and not too light soil. It blooms at the same time as *P. rosea grandiflora* which it follows from Tibet to Afghanistan, but also extends east to western China. *P. denticulata* naturally has many geographical forms and variations—lavender through purple is the usual color range, though pinks and reds are being developed. *P. denticulata alba* has flowers somewhat larger than the type and they are not so densely huddled in a head.

Primula pulverulenta. This species was collected in western China in 1905 by the late E. H. Wilson. It is a handsome powdered candelabra in a vibrant shade of wine. In cultivation, however, it soon showed an inclination to vary to paler shades and pink, and about twenty-five years ago Mr. Dalrymple fixed the pink strain and named it Bartley after his nurseries. It comes true from seed, varying only in the shade of pink and color of eye, which may be yellow, chartreuse or red—the latter the most beautiful.

Primula florindae. The Tibetan Cowslip attains cabbage size in wet situations in the Pacific northwest and has been seen flowering on stalks five feet in height in Seattle during July. It will stand quite a bit of sun, if the moisture supply is constant, Mr. Kingdon Ward introduced it in 1924, naming it in honor of his wife. *P. florindae* is native to the alpine meadows and streams of a restricted district—about one hundred miles in length east to west and sixty miles north to south—in southern Tibet.

PRIMULA AURICULA

MRS. HARRY HAYWARD, Scarborough, Maine

IT IS LIKE writing about an old friendship, tried and true, to tell of my experiences in growing *Primula auricula*, for they cover a period of nearly twenty years. They are set down as not at all authoritative, but as a record of years spent in the pursuit of a dear hobby.

The introduction was the lone product of a packet of seeds from Switzerland. This developed into a plant with fine ruffled flowers of a nice tawny brown. The plant has been divided and has grown into a colony, and is greatly prized. The long life exemplified in this plant—and in many others grown in the following years—is surely a good recommendation for the increased use and appreciation of *Primula auricula*.

The plot accommodating my large collection is a small rock garden

sloping toward the southeast, east and northeast. There is sun for the morning hours but high shade from tall trees through the hot part of the day. The path through this little garden is edged on every side and in groups back among the rocks with the evergreen plants of the *Primula*. Even in midwinter, they can be seen thrusting through the light covering, should the snow melt during a warm period. They are absolutely hardy, depending upon one qualification—the care they have had through the growing season.

Many *Primulas* shed their roots soon after flowering and if conditions of soil and moisture are right, these roots are replaced quickly by strong, new ones. Unfortunately, most gardeners are unaware of this characteristic, with the result that no attention is given the plants at this critical time. This is the time to divide and to give each plant the topdressing that plays so important a part in maintaining health and beauty.

A recommended mixture consists of four part of fibrous sandy loam, one part thoroughly decayed cow manure, one part leafmold, one part coarse sand or gravel, some lime in the form of old mortar or oyster shells, and bonemeal. Another application in early autumn is very beneficial—this one can be even more gritty. So treated, the plants will not send out long protruding trunks which make them unsightly, but can be kept in neat, tight rosettes.

Propagation has been largely by seeds secured from the best sources in Great Britain and Europe. Even during the war years, some seeds came through. The seeds are sown the moment they arrive in autumn or early winter in flats indoors. The treatment given has resulted in a fine germination in every instance.

Flats are prepared with the usual drainage layer, then filled nearly to the top with fresh sandy soil. Strangely, success has been greater with clean fresh loam than with sterilized soil. The top layer is sifted over, with just a little old mortar dust added. It is firmed evenly, and then the flat is saturated from the bottom with water and drained. The seeds are dusted with hormone powder, thinly scattered on the soil and just pressed in. A pan of glass to cover the flat entirely is put on—and kept on until the little plants are growing strongly. After germination, the cover can be tilted slightly to admit air. But the humidity seems to help.

Seeds planted in this way start very quickly. I have had germination in three days, and usually all the seeds are sprouted within two weeks. A flat handled this way will not need watering for several weeks. This is the only critical period for the plants, and damping-off is the hazard to be watched. The hormone powder helps to start root growth quickly and when the true leaves are formed, danger is past for the most part.

One transplanting is all that is necessary. When the weather is settled in spring, the seedlings can be taken out and later put into prepared beds, where they will develop into strong enough plants to winter out with a cover of litter. They enjoy good drainage with plenty of water and frequent application of weak liquid cow manure dressing. Partial shade is necessary.

There is great diversity in the color range of *Primula auricula*. In a collection of even one hundred plants, it would be unusual to find two exactly alike because of the subtle shading in the flowers. The foliage, too, differs, with the leaves of some plants toothed and dusted with meal, while others are smooth and green. The beauty of the plant without the flowers is worth noting.

Here is a description of just a few of the lovely colors in the collection: Many tones of brown from dark to light tan—in the days of Parkinson

EXPERIENCES WITH PRIMULAS IN MARYLAND

Mrs. W. H. HAYDON, Riderwood, Maryland

IT IS GENERALLY thought that efforts to grow *Primula* in Maryland are not successful. In some sections of the state, this is probably true. In any section, it is hardly to be attempted without the greatest vigilance and care.

My section of Maryland, north of Baltimore, is subject to the most erratic and temperamental weather. One year, long periods of drought; another, long periods of intermittent rains, often torrential; hottest of hot sun even in April and May; strong winds from the north in midsummer, drying the soil surface; and night dews on plant leaves—humid blankets of air that hang about for hours or days; then hot sun again. In winter, we have deep freezes and deep thaws.

Rounds of the garden must be made to see that any plants out of the ground by this see-saw of freezing and thawing are placed gently back, else their exposed roots will result in death. Rounds must be made in spring, summer and fall with a trowel in hand and a plentiful supply of water to keep the soil loose and the roots moist.

A great number of years ago, while making visits to nurseries in order to furnish a newly-made rock garden, I discovered the Primrose, in person; my former acquaintance being merely through the poets. There were plants of *P. juliae* and *veris*, some gold-banded. To me, they were just Primroses. I knew as much about them as they knew about me But the Primroses were bought, planted hither and yon, without thought for their requirements, in sun or shade, and left to get along; at times getting rained on, at times drying out pitifully.

Well, nature was kind and patient—for a while. I lost some eventually but, strange to say, many lived a number of years—the gold-laced Cowslips being the last to go.

For years I was without Primroses. Then, some one gave me plants of the *juliae* hybrid, Dorothy, and by then having accumulated gardening book and magazines, I had found out about Primroses. Also, I had found out that in my garden I had areas of shade with a constant supply of underground moisture. Things began to clear up a bit as to the Primula and I decided to try again.

Through the American Primrose Society, I gained enthusiasm, interest and knowledge of so many varieties of this plant that my ambitions soared like a rocket. Immediately, I wanted to try everything. I ordered plants of *P. mistassinica* and *P. wardii* and miserably failed, of course. Coming from far northern states and needing coolness like a polar bear, they simply passed away in the heat and humidity of this climate.

Seeds given to me by the society a year ago, and also some bought from western growers, of *PP. polyanthus*, *acaulis* and *japonica* have been most successful. So also have plants from Oregon. *P. japonica*, grown from seed, made large plants giving a wealth of bloom. Some plants of *P. polyanthus* and *P. acaulis* also bloomed well. This summer, I have set out nearly two hundred small plants from my own seed sowing and have also planted more seed. The little plants are strong and growing fast and, having over three months before hard freezing weather, should be quite able to meet and endure the winter. I have a few *P. auricula*, which, while holding their own, are not doing wonders. *P. marginata* seed planted at the same time as that of *P. japonica* and left out all winter, did not show at all.

A few clumps of *P. frondosa* planted last year came into profuse blooming this spring, and the plants doubled this summer. The Asiatic *P. denticulata* plants are large and lush and bloomed generously. Seed taken from

these immediately into the pots germinated at once. Plants of the double Primrose Marie Crousse bloomed well and are growing nicely.

My *juliae*s, Dorothy and Wanda and others, begin to shed their old leaves about midsummer, new growths springing from the crowns at the same time. It is then that I topdress with fresh leafmold, a little bonemeal, or well-rotted cow manure—little stones about the crowns and plenty of water every day. In a few weeks, they are as large again as formerly and ready for next year's display.

I use eight-inch clay pots for my seed sowing, placing small stones or pebbles in the bottom to about three inches; over these four inches of growing mixture of one third each of sand, loam and leafmold mixed thoroughly till finer than cornmeal. This is patted down firmly and watered. On this damp surface the seed is sprinkled and a very light covering of sand and leafmold, without soil, is scattered over it. A covering (I use an old wood shingle) is placed over the pot, leaving a crack on the sides. This and the inch of space between the soil surface and the top of the pot allow ample air circulation without light. The clay pots are then kept in a container of some sort with water to the depth of two to three inches. In this way, the pot becomes cool and moist and the growing medium never dries out, yet is never too wet. Both seeds and plants benefit by this method and germination is surer and quicker. *P. denticulata* showed life in five days, some seed of *P. polyanthus* in a week; *P. acaulis*, however, was slower. *P. rosea grandiflora* was well up in ten days, but the *juliae*s were lazy lie-a-beds, as also *P. sieboldii*.

Plants may be watered from above, when well grown to several inches—but all do better with the underneath water table. I set the little plants in the open ground where they are to live as soon as big enough, so they may have several months to prepare for winter in their permanent location.

Reprinted in part, from the Quarterly of the American Primrose Society, Vol 4, No. 2 Oct. 1946.



Primula juliae hybrid Mrs. McGillivray, about four years old, in Mrs. W. H. Haydon's garden.

PRIMULA INCANA

MARK and CLAIRE NORTON, Laporte, Colorado

WE FIRST learned of *Primula incana* Jones, our Colorado member of the Farinosa Primulas, from the late Darwin H. Andrews. An inveterate collector himself, he was ever eager to alert other plant hunters to some outstanding and hard-to-come-by gem of a native plant. He knew the species should, in all probability, be in the vicinity of our collecting activities at the headwaters of Clear Creek in the central Colorado Rockies.

According to Mr. Andrews, this Primrose is not especially rare, but erratically distributed, whole ranges of mountains lying between its points of distribution. This has been borne out by our own experiences and by herbarium records at Colorado A. & M. College.

Our first contact with *Primula incana* was made practically in our own backyard at Silver Plume, where we centered our plant hunting activities for some years. Between the new abandoned grade of the C. & S. Railroad, which runs through the town, and the base of Mt. Pendleton lies a strip of marshy meadow several acres in extent. Here *Primula incana* makes its home in considerable quantity, choosing for its habitat the higher grassy hummocks and banks of the trickling streamlets. It does like a moist spot in which to grow, but with its crown well out of standing water.

Plants moved from the locale and planted into our garden in a humus-filled soil on a north exposure settled down comfortably and increased. We tried them out in a sunny rock garden and they proved equally as satisfactory with only a large rock to offer some shade from afternoon sun. Later, we moved established plants and their progeny with us to our new location on the plains at Laporte in northern Colorado and they continued to behave amenably as garden plants. We provide the same general situation and care as for the Polyanthus, a good friable loam, an equable moisture supply and light shade. At no time have we grown these Primulas wet, a condition which would seem to be indicated by their natural habitat.

In fact, even though comparatively short-lived away from the vicinity of its montane home, *Primula incana* has met the measure of good garden plant. With exception of an unusually vigorous colony found last summer on the Roaring Fork near Aspen, Colorado, where individual stems attained a height of ten to twelve inches, plants of this species under cultivation have much exceeded in size of plant and flower any we have seen in the wild. Some specimens from the Roaring Fork colony are being

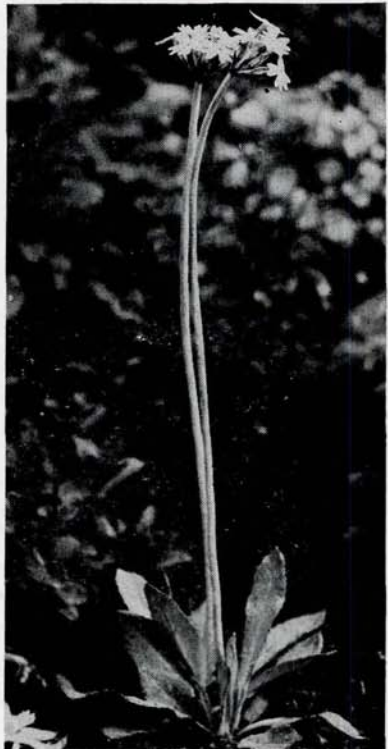


Photo by Mark Norton
Primula incana Jones

carried over winter in pots by a *Primula* enthusiast to whom they were given and who has only a south window sill on which to grow them. Leaves of the silvery rosette are fully three inches in length and very striking.

Primula incana can never attain the showiness of a *Polyanthus* or an *Auricula*. But for those who prefer their beauty in small packages, the plant has much to commend it. The first impression is that of a silvery tuft, the leaves all basal. Since the method of division is much as with *Polyanthus*, several crowns are closely crowded together into a tight little clump. Each individual leaf is oblong-lanceolate to spatulate in shape, gradually contracting at the base, tapering into a short petiole, and from an inch to three inches in length. Its margin varies from sub-entire to crenate or sinuate-dentate. The underside is white mealy; the top less farinose. From this tuft of leaves in June arises an unbranched scape, one to each mature crown, white mealy when young, topped by an umbel of lilac-pink flowers. Lobes of the salver-form corolla are deeply cleft, and the "eye" which gives this group the name of Bird's-eye Primrose, is fairly prominent.

Primula incana goes under several names in the floras of the region, *PP. farinosa* and *americana* being the most common. However, *P. incana* Jones is becoming generally accepted for the Colorado species of this widely distributed section of Primroses, the name having been published in 1895 and thus preceding Rydberg's *P. americana* by six years.

A COOL TRIO

KATHLEEN N. MARRIAGE, Colorado Springs, Colorado

FOR THE SHADY or the north-facing rock garden, some of the low green groundcovers give a pleasant restful appearance when the early flowers have finished blooming. On a hot summer day, the effect produced by large areas of green, whether a greensward with patterns of tree shadows or the green of good foliage, seems more refreshing than whole beds of noisy flowers.

One rock garden I know, partly in the shade of deciduous trees, has plenty of sunshine for the early *Phloxes*, *Aubretias*, *Mertensias* and bulbs, but when trees are in leaf there's not much in it but green. The rocks are rosy red granite splashed with soft grey-green lichen; between them, surrounding the has-been flowers, are generous areas of the delightful little *Euonymus radicans* var. *kewensis*. Its stems are so slender and leaves so diminutive and so clean that it is welcome even in the tiniest rock garden.

Dryas octopetala, an alpine shrub and a quite prostrate, good green mat is here, too. It blooms fairly well in shade and its twisted silky seeds are decorative, but its flat spread of little leaves gives constant pleasure. There's one big rocky elevation on the north side of Pike's Peak where this *Dryas* covers most of the ground. It is the worst traffic hazard, for looking upwards across the tilted surface, one sees in July about ten acres of the little flat white wild-rose flowers, and in late August millions of plummy, fluffy seed heads. How can one spare attention from such breath-taking beauty to keep clear of mere down-coming cars? The latter drivers seem somewhat anxious. They're on the outside where going off the road means rolling over and over a thousand feet or so. There are worse places to end than in the presence of such majesty. Such stupendous views and such thin heady air, but there's no chance to tell this to these drivers. Enough of such moonings, we're rock gardening.

Euonymus radicans kewensis is rather slow but easy. It would "grow in your pocket" as Pat, our old gardener in Ireland, used to say. It mats satis-

factorily as well as being the choicest little wall climber. In Colorado, bright warm winter sunshine is our daily joy, but it is the bane of such plants as the evergreen varieties of *Euonymus*, so this little chap must face north or be covered in winter with snow or a substitute.

The Alpine Willow, *Salix saximontana*, another prostrate shrub, has larger leathery leaves of deep glossy green, a really rich carpet around the bigger rocks near the base. It seems to relish peat moss on deep gravel-anything, that is its choice in its high home above timberline in our Rockies. At lower elevations, in captivity, it likes a cool place in shade or dappled sunshine. A mulch of fine chip rock, mixed with a little peat moss, and scattered on the surface of both *Dryas* and this Alpine Willow, helps them through the winter, in case they do not get their accustomed winter blanket of snow.

The Alpine Willow's chief beauty is its foliage, deep veined and suggesting a lacquered potato leaf. The only difficulty I have had in growing this is its receptivity to rust. Adequate drainage and an occasional dash of Bordeaux under the mat keeps it clean.

Dryas and *Salix* are reasonably easy to grow from seed. They germinate more enthusiastically in spring, when they have been sown in time to get some winter freezing. I'm still superstitious enough to think there is an especial virtue in snow for germination of all these cold-climate seeds.



Dryas octopetala

THE GENUS DRYAS

ELSE M. FRYE, Seattle, Washington

AMONG REALLY valuable subshrubs, the genus *Dryas* stands very high. It seems to grow in all the northern mountains of Europe and America. I do not know about Asia, but it seems not unlikely that it circles the globe since it occurs in Alaska and Greenland and is well able to endure the cold of Siberia.

It is perfectly flat in growth, well covered with small, oval, almost evergreen leaves, somewhat thick and slightly puckered, and in all but one species prettily scalloped. The flowers are lovely soft white little wild rose-like affairs (with one exception) of eight petals, occasionally more,

Continued on Page 32



MAY 5th - AT THE NEW YORK BOTANICAL GARDEN

Members of the American Rock Garden Society have been invited to be guests of the New York Botanical Garden on May 5th, to enjoy a lecture by the noted naturalist, Mr. Rutherford Platt, on "Adventures in North Polar Natural Rock Gardens"—report of an expedition to Greenland with Mr. Donald B. MacMillan. The hour of the lecture is three o'clock and tea will be served afterward. However, members may arrive as early as they choose to visit the Thompson Memorial Rock Garden.

Please make your reservation with Mr. Harold Epstein, 5 Forest Court, Larchmont, N. Y., so that he may notify the New York Botanical Garden how many members to expect on that day.

MAY 22 - ANNUAL MEETING

As announced in the January—February issue of the Bulletin, the annual meeting of the American Rock Garden Society will be held at the home of Mrs. J. M. Hodson, Greenwich, Conn., on May 22.

Reservation for the annual meeting should be made with the secretary Mrs. Dorothy E. Hansell, 19 Pittsford Way, Summit, N. J., before May 10th.

SEED EXCHANGE

Again, Mrs. L. D. Granger, our Seed Director, is able to offer seeds for distribution among the members of the society, as follows:

From Mrs. W. I. Higgins, Butte, Mon.: *Clematis columbiana*, *Parnassia fimbriata* (from Mrs. Higgins' wild flower garden, elevation 8,300 ft.) *Penstemon Coral*, *Penstemon nitidus*.

From Mrs. E. M. Babb, Portland, Me., *Penstemon Blue Bedder Purdy*, *PP. cobaea*, *diffusus (serrulatus)*, *glaber*, *grandiflorus albus*, *ovatus (true species)*, *hirsutus pygmaeus*, *triflorus (Texas)*, *whippleanus (Utah)*, *P. richardsonii (Oregon)*.

From Mr. Claude A. Barr, Smithwick, S. D.: *Lithospermum linearifolium*.

From Mr. J. E. Mitchell, Barre, Vt.: *Anemone globosa* (mostly yellow), *A. patens nuttalliana*, *Aster spectabilis nana*, *Camassia quamash*, *Eriogonum subalpinum*, *Penstemon caelestinum*, *Sideranthus spinulosus*.

From Mr. James McGrath, Fort Lee, N. J.: *Dicentra eximia*, *Hypericum frondosum*, *Linum perenne*, *Silene armeria*, *Stylophorum diphyllum*.

From Mrs. H. P. Magers, Mountain Home, Ark.: *Primula candelabra* mixed, *P. polyanthus*.

From Mr. C. R. Worth, N. Y.: *Meconopsis cambrica aurantiaca*, *Oenothera* Sp. (dandelion rosettes, acaulescent yellow flowers).

From Mrs. R. M. Lawton, Plainfield, N. J.: *Hosta minor alba*, *Koelerteria paniculata*.

From Mr. Elmer C. Baldwin, Syracuse, N. Y.: *Antirrhinum maximum* (rust resistant); *Campanula carpatica* (mixed), *C. medium calycanthema* (white), *C. medium* (blue); *Centaurea gymnocarpa*, *C. perennialis* mixed; *Dianthus Chabaud's* *Enfant de Nice* mixed; *Dianthus barbatus* Newport Pink; *D. plumarius*, double and single mixed, *D. plumarius semperflorens*, (mixed); *Geum* Mrs. Bradshaw; *Heliotrope*; *Heuchera sanguinea* hybrids mixed; *Hunnemannia fumariaefolia* "Sunlite"; *Iberis sempervirens*; *Lantana* hybrids mixed; *Linaria cymbalaria*; *Linum perenne*; *Lychnis chalconica*; *Tritoma* Pfitzer's hybrids.

Send your request and stamped, self-addressed envelope to Mrs. Granger, at Warren, Mass., if requests are many—large envelope and extra stamps.

YEARBOOK OF THE NATIONAL AURICULA SOCIETY

The 1948 Yearbook of the National Auricula Society (northern section) of England carries several items of interest to alpine enthusiasts. Colored plates of alpines, as well as of Auriculas, illustrate the contents which are contributed by some of England's and one of America's ablest authorities. K. C. Corsar, F. R. H. S., writes on "Good Alpines"; A. J. Macself, editor of *Amateur Gardening*, contributes "Observations on Auriculas". Dr. Walter C. Blasdale, of Berkeley, California, discusses the "Chemical Composition of Auricula Farina."

Copies of the Yearbook may be obtained at \$1.25 through Mrs. Florence Levy, Gresham, Oregon, or direct from Mr. R. H. Riggs, Honorable Secretary, "High Bank", Rawtenstall, England.

THE GENUS DRYAS

Continued from Page 30

that stand erect and solitary on naked scapes of four inches or so. When content, it is a prodigious bloomer. The seed head is no less decorative—it is a twisted hank of silky plumes with a pinkish sheen, the whole somewhat reminiscent of a Turk's cap.

I have found *Dryas octopetala* in various mountains—Glacier National Park and the Canadian Rockies. It is very common in Jasper Park and the surrounding high country.

Not quite so pretty is *D. drummondii*. Its petals, although a fine yellow, are small and curve close about the stamens in rather parsimonious fashion. This is also common in the Canadian Rockies. The most spectacular colonization is on the banks of the Kicking Horse River, where it forms an almost continuous sward over the gravelly shores.

On the way to Jasper Park, I wandered through an old, almost mature peat bog. I found all sorts of entrancing things in the sandy peaty soil—*Cypripedium parviflorum*; a small, woolly, white-flowered *Androsace*; and wide carpets of *D. integrifolia*. This differs from *D. octopetala* in that the leaves are narrower and unscalloped and that they have a decided gloss.

The easiest doer in gardens is the hybrid between *O. octopetala* and *D. drummondii*, known as *D. suendermannii*. It is a vigorous and aggressive grower and generous with its bloom. What has been called *D. octopetala* var. *minor* is smaller in all the vegetative parts than the type; also it forms a closer growth and is less aggressive. This is not uncommon in England; a small amount has been collected on Mt. Hood, Oregon, although it appears not to be common in America.

Dryas is easily, though slowly, grown from seed and the terminal branches may be used as cuttings in late June or July—they strike roots in sand. Since the main root system consists of a long and woody tap root, old plants do not like to be moved.



Photo by Hugh Ittis

WHEN GREEK MEETS GREEK

No doubt it was a notable occasion for both when Dr. Wherry met Mrs. Edward M. Babb in her garden in Portland, Maine.

It is a happy circumstance that we are able to present to you a picture of the event. Most folks think of Dr. Wherry as adorning a classroom or a lecture platform or in the editor's office, but we rather suspect that in the picture you see him in his favorite role as an ecologist in the field.

Little known to us except thru her writings, we were just as glad to see Mrs. Babb's picture, taken in her beloved garden, as we know you will be.

A. H. O.

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PRIMULA AURICULA

Continued from Page 25

and some of the early growers, these brown were called "leather-coats"! Reds from deepest crimson to a startling chinese-red; yellows from deepest primrose to pale cream and white; purples from deep to lavender and true blue. Many of the flowers have perfect centers, very circular of purest white or yellow—this center is called the paste. A few outstanding kinds would include: marine-blue with snow-white center; black with white paste; true pink with snowy center; perfect reds with yellow paste; and a group of unusual shades, soft beige and gray with a silky texture. Then, there are a few of the coveted green-edged and those called green-edged fancies; also, the true *auricula* with its lovely mealed leaves and soft yellow flowers.

Here, the blossoming time of *Primula auricula* is through the month of May, depending upon the weather.

The history of this *Primula* and its introduction to gardens in the late sixteenth century, as contained in "Primulas of Europe," by John MacWatt, M. B., is interesting. The chapter on Kerner's theory of the origin of *P. auricula* offers valuable information to anyone desiring to know more about this beautiful section of the genus *Primula*.

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