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Primroses

OFFICERS & BOARD OF DIRECTORS

American Primrose Society - Winter 2002 1

Quarterly of the
American Primrose Society
Volume 60, Number 1, Winter 2002

The purpose of this society is to bring the people interested in Primula together in an organization to increase the general knowledge of and interest in the collecting, growing, breeding, showing and using in the landscape and garden the genus Primula in all its forms and to serve as a clearing house for collecting and disseminating information about Primula.

- 1 Dedication
- 2 Foreword by Jay Lunn
- 4 **Living Soil** by Mary Kordes
- 8 **Getting Started with Primroses** by Dee Peck
- 14 **Barnhaven Primroses** by Jay Lunn
- 16 **Primula vulgaris** by Penelope Harrison
- 19 **Primula juliae and hybrids** by Mary Kordes
- 22 **Polyanthus Primroses** by Angela Bradford
- 25 **Primula denticulata** by Pam Eveleigh
- 36 **The Meaning of Plant Names** by Ralph Balcom
- 37 **Primula marginata** by Mary Irwin
- 40 **Primula japonica** by Dot Plyler
- 42 **Primula sieboldii** by Elaine Malloy
- 44 **Primula auricula** hybrids by April Boettger
- 47 **Primula elatior** by Fred Knapp
- 50 **Primula veris** by Grace Dowling
- 52 **Primula florindae** by Beth Tait
- 54 **Primula kisoana** by Ed Buyarski
- 58 2001 Seed Exchange Donor List
- 60 A.P.S. Membership Applications

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60th Anniversary Dedication

This expanded 60th Edition of Primroses is dedicated to the future members of the American Primrose, Primula and Auricula Society. While our Society has a very rich history full of lifelong individual efforts furthering its purpose, it is the future generations of members who will benefit from those efforts. Without new members, all the knowledge, hard work, dedication, and decades of volunteer efforts made by our members, both past and present, will be lost between the pages of our printed history.

It is our goal to place in this edition as much practical information as space permits to enable any gardener to be successful growing the widest range of the plants; by soil type, sun, shade, temperature and PH preference of the genus Primula. In the pages that follow we have comprehensively detailed 12 primroses and complemented them with useful and informative articles from past editions of Primroses; to include such information as geographic considerations, various habitat considerations (the scree, the rock garden, the woodland environment, the raised peat bed), and references to resources that will enable those so interested to continue their interest.

These 12 primroses are meant to be an introduction to the genus Primula. They only scratch the surface of this broad and diverse genus. They were chosen because of their probability to make the gardener, new to the genus, successful growing them. The Society 2002 Seed Exchange list will offer these 12 Primroses as a "Basic Set" that can be ordered as a group to get the gardener started with the genus Primula.

We are hopeful that success will bring with it an interest in joining our Society. Join us in our purpose to benefit others to come to know the pure joys and rewards of growing these wonderful plants. Welcome!

Editorial Committee
January 2002

Editors Note... The recognition for the need for this "basic how to" publication came from Ann Lunn during a conversation at the 2001 APS National Show regarding her "Plant Portrait" series. Both Ann and Jay have been instrumental in its creation. They deserve not only recognition for inspiring this expanded edition, but a warm thank you for decades of work benefiting our Society.

19 50

40 28

52 42

22

54

44

16

47

25

Foreword to the 60th Edition

By Jay Lunn

The common name, primrose, is used in conjunction with several genera. This contributes to some confusion over the name. For example, some people believe that primroses are the fairly large plants commonly growing in the arid western United States with white or yellow flowers that close by mid-day. These are the evening primroses in the genus *Oenothera*, not the true primrose. Primroses are in the genus *Primula* and are unrelated to the former. Carolus Linnaeus, a Swedish botanist now known as the "Father of Botany", published the first description of a *Primula*, *P. elatior* (which may have also included what is now known as *P. vulgaris*) in 1735. His choice of name for the genus is from the Latin *prima*, which means "first". It is an appropriate name for the genus with well over 400 species now recognized, many of which are the earliest blooming plants in their native habitat.

You may ask "why do I need primroses in my garden?" Primroses are generally early blooming plants that provide color to the garden when little else has begun to flower. In Pacific Northwest gardens, *P. juliae* hybrids start blooming in mid-winter and continue through early spring and begin their show in colder regions as soon as the snow melts. Other primroses are slower to begin their floral display, but they will be flowering by late spring or early summer. Primroses do not overpower other plants in the garden but have a charm like few other plants. Be forewarned, once bitten by the "primrose bug" you will forever be smitten.

Most *Primula* species grow in the cooler and wetter areas of the Northern Hemisphere, with the heaviest concentration in the Himalayas and western China. Some species grow at very high elevations at the edge of glaciers and experience near freezing temperatures most nights. Others grow in somewhat arid regions and are rarely exposed to any temperature near freezing. Most grow in a habitat between these two extremes. As you might suspect, some species are a challenge to grow in a garden setting, while others are very adaptable to cultivation. Many species, particularly those native to Europe, have been cultivated and hybridized for hundreds of years. During this period, innumerable cultivars have been developed and many of these have stood the test of time, particularly in United Kingdom gardens.

Few genera can match the scope of colors exhibited by the genus *Primula*. Through hybridization and selection of variants of species, the color range of primroses currently available is astronomical. Modern *P. auricula* hybrids are available in any color imaginable and others like the *P. juliae* hybrids (*P. x juliana* & *P. pruhoniana*), *P. x polyantha* and *P. sieboldii* selections are not far behind. Some species have a very limited color range, but when planted in mass, can produce a spectacular show for the pleasure of the eye.

Providing a moderately rich soil, moisture throughout the growing season, and

some protection from the hot sun can satisfy most primroses. Although some respond well to a rich diet, most will maintain their character and get along just as well with limited fertilization. You would be amazed at how well some primroses will perform while growing in pure sand and just a little feeding! None like the full mid-summer sun of low elevation locations at latitudes that are closer to the equator than either pole. Even primroses grown farther from the equator will appreciate a slope facing away from the prevailing sun or at least partial shade, particularly in the afternoon hours.

Primroses are subject to some predation by a few despicable critters. Since they are producing tender morsels early in the season, slugs find them very inviting. Root weevil larva can be a problem in early summer, especially if the adult weevils are not controlled when attracted to other plants in the garden.

In this expanded 60th Edition of Primroses, twelve species or categories of primroses, considered easy to grow by many gardeners in a variety of geographical locations, are examined in detail. Most of these "selected primroses" are very cold hardy. They can be grown in Alaska, Scandinavian countries, interior provinces of Canada and upper Midwest of the U.S., and do so probably better than in the Pacific Northwest, Atlantic coast, England or France. If you live anywhere in California, except right along the Pacific coast, you may find growing some of them a test of your gardening skills. However, Californians are fortunate to be able to grow less hardy primroses in the open garden that many of us would never dream of attempting. We can't all garden in Scotland where cool, moist summers provide ideal growing conditions, but these 12 will do well for most of you. These are not the appealing little bright colored primroses that are offered by supermarkets and chain stores in early winter. The hardiness of these delightful plants has certainly been bred out of their constitution. Buy these if you wish, but consider them to be annuals. They have been hybridized to grow from seed to a flowering plant in less than a year. If you plant out enough of them, you may find that some will persist for more than one year.

Granted, sources for some of the plants mentioned here are not easy to locate. Some of the named cultivars may be practically impossible to buy, unless they are being propagated by tissue culture. Those that can be routinely divided can often be obtained from specialty nurseries. All can be grown from seed, but don't expect those that are hybrids to come true to the parent plant. Seed of all of these "selected primroses" often appear in the seed list of the American Primrose Society seed exchange. Exchange of plant material between Society members can be a good way to obtain hard to find clones. We encourage you to join the Society, learn more about primroses, take advantage of the seed exchange and develop friendships with other members. A membership application is in the back of this publication.

If you have never grown primroses, try a few of these that appear to be right for you. When you find how worthwhile they are in your garden, try a few more. We think you will be pleased!

Living Soil: Primula's Perfect Environment

by Mary Kordes, Ahmeek, Michigan

Are you planning to break new ground to make yet another garden, or to expand your existing one? Perhaps you need to redo your garden, lift and divide your plants, regroup for a better design, or add new plants. Most of your plant "actors" may have already given auditions, but have you thought about their stage? The very foundation of your garden, the stage that will support your entire show, is your soil. It will provide the home and food source for perhaps the lifetime of each and every plant in your cast. Every soil can use a boost to at least replenish the organic matter. The soil microorganisms, those "good little guys" who populate our soils, eat constantly as they turn that organic matter into humus and usable plant food.

HUMIFICATION

The word humus has become a catchall encompassing any organic material we add our soil but, unless these materials are partially digested to put them in an advanced stage of decomposition, they are correctly labeled organic matter. Through the process of humification, organic matter eventually decomposes to the very finest of particles and only then becomes humus. It is the wondrous world of microorganisms within our soil that breaks down organic matter during humification. There are millions of them in each spoonful of soil - from bacteria, yeasts, fungi and others, on to the tiniest one called protozoa. As each organism family eats once-living organic matter in its varying stages of decomposition, it is linked to the next family in the chain of interdependent microorganisms. The completion of the life cycle of one family signals the beginning of another family's uniquely specialized task. Humification finally, through consumption and digestion by these microorganisms and through chemical processes, reduces the organic matter to simple elements.

MINERAL NUTRIENTS

Acids produced through the carbon dioxide released by soil bacteria during the process of humification also play a key role in plant nutrition. These acids dissolve minerals in the inorganic components of soil, the mineral rock particles that make up all soils, to make these minerals available through the soil water. As the humus content in our soils is consumed and depleted, the numbers of microorganisms it can support decreases and the production of available plant food slows. Humus does eventually reach a point where it no longer contains reusable plant food. Therefore, the organic matter in our soil must continually be replenished to assure a healthy, active micro-organism community. Also, adding fresh organic materials to the soil stimulates soil bacteria and hastens the decomposition and nutrient release of humus already in the soil.

SOIL STRUCTURE

These soil organisms need humus for another reason, too, namely good soil structure. This means a soil that is loose and fluffy enough to allow free movement of air and with enough organic matter to retain moisture. Humus is the stuff that builds good soil structure and is the critical component for the soil organisms to recycle with maximum efficiency. Our soil friends also need warmth for stimulation. They are most active when the soil is warmed by the sun.

Loam soil consists of a balance of clay, silt, sand and humus and is the ideal soil for most plants. Not many of us are lucky enough to be gardening in loam, but we can amend our soil to make loam. Organic matter serves to loosen and lighten heavy clay soils. You should also add quantities of a sharp sand/smaller gravel mixture to spread apart the fine clay particles, thus opening it for better drainage and aeration. Be careful not to work clay soils when they are wet as this will destroy the soil structure and lead to compaction.

Sandy soil, on the other hand, needs plenty of organic matter to absorb and hold any moisture that falls upon it. The addition of some clay soil to the sandy soil also greatly improves texture and nutrient exchange. I am lucky enough to have clay at hand to add to the thin, somewhat sandy, acid soil in some of my gardens. The finer clay particles serve to hold the soil together and also collect more moisture as each particle is coated with a thin film of cohesion water.

Black, crumbly compost and aged animal manures add wonderful fiber to your soil for texture and moisture retention, and they contain nutrients. Spent mushroom compost is another excellent source. Sphagnum peat moss is readily available at garden centers, and is one of the most-used soil conditioners. It is slower to break down than most fibers, so doesn't add nutrients as readily as do other organic materials. Peat moss must always be dampened before mixing with your soil. I prefer to add hot water to a pail or plastic bag partially full of peat moss, then stir and knead it with my hands until it is damp enough to hold together in a loose ball without being soggy.

COMPOSTING

Organic matter in its rough, predigested state is the very best conditioner we can add to soil. There is no need to compost it first, though we do compost surplus plant residue. Work the materials into the soil or simply tuck them under your mulch so the "good little guys" can begin their work. The soil organisms will chomp on them with gusto to reduce them to minuscule particles. You won't lose an iota of the nutrients those organic materials contain as can happen when composting. There will be no leaching to runoff or to the atmosphere, and all the goodness in the materials will go right back into the soil to feed your plants. Chopping the organic materials to small, but not compacted, particles affords more surfaces for the soil microorganisms to attack and speeds recycling to usable plant food. If you don't

have a shredder, chop your organic materials with your lawn mower. Rake the materials, including all the leaves you can collect in the fall, into wide rows and run over them with your lawn mower. Repeat the process until they are chopped to as fine a texture as can easily be handled.

Plant trimmings, grass clippings, weeds, leaves, sawdust, wood chips or bark, corn cobs, seed hulls, seaweed, and even human and animal hair combings are just some of the valuable sources of organic matter. But one word of caution: don't use any plant residue that has been treated with an herbicide, as it may affect the plants you want to feed. I also frown upon grass clippings containing dandelion blossoms as their seeds continue to develop even after cutting, and I am sick of pulling healthy dandelion plants out of the gardens! By all means, don't recycle quack grass. Those beautiful long, white roots, even when chopped, will grow and grow. Though all organic materials are rich, nutrient values do vary. The type of organic matter, and what nutrients and minerals it originally used to grow, will determine benefits received. So it's back to the adage, "Variety is the spice of life." Don't waste a scrap of any plant residue. Shove it right back into the soil to begin that wondrous cycle once again.

NITROGEN SOURCES

Since nitrogen found in the protein of organic materials is the most important food of soil microorganisms, I like to add a dusting of an extra rich nitrogenous source along with the organic materials to stimulate those organisms and get them working. Aged manure (never add fresh manure as it is too "hot" and will burn plants), blood meal, and fish meal are high in protein. But don't confuse protein in organic matter with the protein we derive from meat. No unprocessed meat product should ever be added to either a compost pile or your garden, as it will surely attract rodents and other scavengers. Earth worms, too, will swarm in to enjoy the organic feast in your garden. They drag those wonderful organic particles down deep into the soil, creating tunnels as they go. Those tunnels are the magic roads to soil aeration, as fresh air seeps through them to provide the soil organisms and plant roots with needed oxygen. The best time for us to feed our soils is when preparing a bed for planting, as the soil can be deeply and thoroughly worked without disturbing plant roots. Alternatively, add more organic matter to soils at any time, working it into the soil between plants, or just by adding mulch and letting the earth worms carry it down into the soil.

SPECIAL ADDITIVES

Even loamy soil needs further amending to keep different plant families happy. Most of our primulas, for example, need extra organic matter for moisture retention. Auriculas require an extra portion of coarse sand and gravel to mimic the soil of

their mountain origin and facilitate faster drainage. Beyond improving soil texture, soils can be deficient in nutrients. It is a good idea to take soil samples in your garden, then either test them with a soil test kit from your garden center or, for more in-depth scrutiny; go to your local State University Cooperative Extension office (if you live in the U.S.A.). They will advise you on the proper method for taking the sample and, after they analyze it, will supply you with a rundown of what your soil needs. A small fee is charged for this service. The term pH refers to a soil's acidity or alkalinity. pH 7 is considered neutral on the pH scale. Soil organisms are happiest at pH 7, when the most plant foods are suspended in the soil water. Numbers higher than 7 indicate an alkaline soil, while lower numbers become increasingly acidic. Some soil organisms will be less active in either an acidic or alkaline soil. Therefore, certain nutrients will be lacking under these conditions, but that soil will still provide a perfect environment for particular plants.

Most plants, including the majority of our primulas, prefer a slightly acid soil. The addition of peat moss or cottonseed meal, if necessary, helps supply that acidity. But most primulas of the section *Auricula* require a more alkaline soil and may need a little lime, bone meal or wood ashes added to most soils to supply the calcium they crave. A mulch of crushed oyster shells also sweetens the soil as they slowly decompose. None of the food we give our plants can be used by them until it has been reduced to its original chemical form and suspended in the cohesion water that surrounds soil particles. Amending our soils with organic materials is the best assurance that soil bacteria will thrive and the chemical exchanges take place to produce healthy soil and plants. When your soil amendments have been made, there should be no further need to disturb the soil until you have to lift and divide your primulas. In fact, it is far kinder to the microorganisms who live in the soil not to destroy their community structure by cultivating your soil. If necessary, aeration of soil can be accomplished by merely pushing a garden fork or small fork-like hand tool into the soil and gently wiggling it back and forth without actually lifting out the soil.

MULCH

I like the unifying appearance of a 2-3 inch chopped leaf mulch on all of my gardens. It becomes a rich brown color and does an excellent job of suppressing weeds. Grass clippings are also good; they age to a lighter shade of brown. I have found that mulch retains soil moisture, but I must still be careful to water the gardens thoroughly, especially in dry spells. The mulch will absorb the moisture like a sponge and, unless enough water is applied, the underlying soil can become bone dry. This is especially true when gardening under trees. The tree roots tend to grow into the rich garden soil in search of both nutrients and moisture and will sap the soil leaving little for plants. Careful attention to watering is also important to microbial activity. Dry soil slows the process of humification by soil organisms, resulting in few nutrients

Getting Started with Primroses

by Dee Peck

The *Primula* is probably one of the best known plants throughout the world, and yet the average gardener is barely acquainted with even the commonest kinds. Somehow they have acquired the reputation of being exotic and consequently very difficult to grow. Many of the loveliest are exotic and impossible to grow away from their native terrain, but many others can be grown by the expert gardener, and a generous number will flourish even under the hand of the beginner. Here we will deal with the last category and add a sprinkling of the more difficult for those who relish a bit of challenge.

Most of the four hundred or so species of primroses are hardy perennials and are scattered extensively throughout all parts of Europe, Asia and North America. Oddly, only one species is found below the equator, *Primula magellanica* of South America. Probably the greatest number are native to Asia and were introduced to the western world by plant explorers of the last century such as Farrer and Kingdon-Ward.

With few exceptions, primroses share the same cultural needs: a rich humusy soil, good drainage, ever present moisture, and moderate amounts of light—the need for each depending upon the degree of the others. For example, if your primroses are in shade, moisture requirements are lower than if they are in the sun for part of the day. If your soil is sandy and fast draining, watering must be frequent, more so than if your soil is a humusy loam. Fortunately all these factors can be modified, as we shall see.

The name *Primula* springs from the Latin word “primus”, or “first”, signifying the plants’ early appearance. The very first to appear in most areas is *Primula denticulata*, close on the heels of the last snow, and occasionally caught by it! In very early spring, this primrose emerges from swelling rosy buds that remained, barely visible, when the foliage of the previous summer died down. A sphere of blossoms opens even before the stem elongates. The leaves expand as the stem rises slowly, usually to about ten inches in height. The bloom period is three weeks, and bloom color is usually pale lavender. However, forms are available in pure white, purple, pink, and red—all with a white eye. Self-sowing is common, and it is a good idea to pull and discard unattractive colors before they seed. Good colors can be allowed to seed, and can also be easily divided after flowering, in the following manner. Carefully lift the clump, shake gently to remove soil, and carefully separate the crowns. Trim the roots of each division lightly, remove dead leaves and spent blossoms, shorten the leaves by about one half, and replant in rich, well drained soil. Make sure the crown is at soil level and carefully spread the roots, firming the soil about them. Some dilute liquid fertilizer at this time will help counteract the shock of transplanting. Care must be taken that the divisions never dry out. Water

religiously until established, and shade if necessary. This method of division can be used for most primroses and will increase choice colors rapidly.

Although it is one of the easiest primroses to grow, it is important that *Primula denticulata* be well-drained in winter. It has rather heavy, thong like roots, which, along with the crown, will rot in standing water. It prefers a shaded position but will tolerate more sun if planted near a large rock for shade and a cool root run. A stone mulch is also excellent. It promotes drainage, cools the soil and conserves moisture. *Primula denticulata* is not pretty when bloom is over. The foliage has enlarged to foot-long cabbage-like leaves and the tall stems are topped by untidy seed heads. An attractive solution is an inter-planting of deciduous ferns. The uncurling fronds appear after the flowers of the primroses are gone. This same camouflage can be used with other early flowering primroses.

From late March to early April the “bird’s eye” or farinose primroses appear. The type *Primula farinosa*, is a tiny three-inch lilac-pink beauty covered with silvery meal. *Primula frondosa* is almost identical, but somewhat larger. *Primula rosea* is a glamorous cousin, tiny and a glowing rosey pink. It needs more moisture and thrives near running water. These last two are somewhat more difficult, but *P. farinosa* and *P. frondosa* are well worth trying. They want the same culture as *P. denticulata*, and especially love the gritty, humusy stone mulch.

The vernal primroses arrive at the height of spring. They are the ones which most of us know, and are the easiest of all to grow. The true “primrose” is the wild primrose native to the British Isles, *Primula vulgaris*. Its pale yellow blossoms are borne singly on short stems that rise just above the foliage. Crosses with its Turkish counterpart, the pink *P. sibthorpii*, have yielded hybrids in an endless array of colors; pink, rose, pale blue, red, white, orange, bronze and deep velvety purple. These hybrids are properly known as *P. acaulis*.

Also growing wild in Britain and much of the continent are the cowslip, *P. veris*, and the oxlip, *P. elatior*. They are not flashy beauties, but have a quiet charm and are of special interest because they, crossed with *P. vulgaris* (or *P. acaulis*) are thought to be the progenitors of the fantastic hybrid polyanthus primroses.

The polyanthus primrose (*Primula x polyantha*) is a hybridizing triumph. It exists in every color, some brash and brilliant, some pale and subtle, some so deep a purple as to be almost black. All carry a cluster of blossoms on a six to eight-inch stalk. There are many forms, from charming miniatures to giants with sturdy stems and massive flowers. There is ‘Jack-in the Green’, an old form with a green ruffled collar about each blossom. Some are hose-in-hose, some double.

The last vernal primroses we will talk about are *Primula juliae* and the *P. x juliana* hybrids. *Primula juliae* is a low plant with tiny half to three quarter inch kidney or heart-shaped leaves and luminous wine red blossoms carried singly on short red stems. It spreads into mats by means of a creeping rootstock rather than multiple

crowns. A striking effect can be achieved by interplanting *P. juliae* with *Chionodoxa*, *Scilla*, grape hyacinths or early flowering miniature pale yellow daffodils.

Crossed with *Primula vulgaris*, *Primula juliae* has produced the hybrid line of *Primula x Juliana*. The best forms have *P. juliae*'s small size, and have acquired the best *P. acaulis* colors. Some have single blossoms, and some have umbellate clusters. Among the best are: 'Wanda', crimson-magenta; 'Pam', brilliant red; 'Jewel' crimson; 'Schneekissen', white; and 'Marguerite', yellow.

The vernal primulas, unlike the deciduous *denticulata* and *farinosa*, retain their foliage throughout the summer and even into the winter. Watering is very important as the leaves can be badly disfigured by red spider and the plant weakened in conditions of drought. For the same reason, partial shade and rich moisture retaining soil are essential. If grown under sunnier conditions, as much humus as possible should be incorporated into the soil. Vernal primroses multiply rapidly and should be divided every two or three years, as described under *denticulata*, and the hard center portion of each clump discarded.

While all this activity has been going on in the woodland and its borders; in the rock garden the Auriculas have been coming into their own. The distinguishing characteristics of the Auriculas are their thick succulent leaves and heavy stems. This tells us that they have adapted to drier, more open conditions than their thin leaved relatives are used to. It also points out the importance of rapid drainage to prevent rotting of the crown and indicates that ideal planting spots would be on scree-like slopes, between rocks, or in dry walls. However, this does not mean that the roots may ever be permitted to dry out. A constant supply of moisture is still necessary. Fortunately the Auriculas are able to send their long tap-roots deep into cracks and crevices in search of water.

The two groups of Auriculas that can be grown out of doors are the European mountain or alpine Auriculas, and the garden Auriculas. The wild mountain or alpine species and their hybrids are an extensive group. They are by no means impossible to grow, but tricky enough that they do not fall within the limits set for this article. However, as your expertise increases, do try some! They are somewhat difficult to find, but can be obtained from nurseries selling alpine plants. Others can be grown from seed, available through the American Primrose Society and American Rock Garden Society seed lists. A few worth trying are: *Primula auricula* v. *albocincta*, *P. rubra* (also called *P. hirsuta*), *P. x pubescens*, and *P. marginata*.

The garden Auriculas are similar to, but larger than, the alpine Auriculas. Through hybridizing, the color range has been expanded from the original yellow and lavender colors, into odd and interesting shades including brown, mahogany, maroon, crimson, and gray. They usually are found in catalogs simply as *Primula auricula*. The heavy foliage lasts all season and well into the winter. Their culture is identical to the alpine Auriculas, but they are tougher and easier. Choose a site as described for the

mountain species, and plant in a good, gritty soil. Then cover the surface with a thick stone-chip or gravel mulch and partially shade the plants with large rocks if natural shade is absent. They can be divided after flowering just like the other primroses, but often the roots are scanty and it is wise to treat such divisions as cuttings until more roots develop. A special cutting bed with a plastic-covered frame is useful for this. Place it in a bright, but shaded area and take care that it is not too moist or the crowns will rot. Just barely moist at the roots and humid around the foliage is the key to success.

Appearing just a little later than the vernal primroses, but very similar in their cultural needs are the Japanese woodland primroses, members of the *Cortusoides* section. The one most commonly grown is *Primula sieboldii*. This is a relatively easy and long lasting primrose, which grows into clumps of scalloped oval leaves. Its underground rhizomes creep over the lightly shaded forest floor, forming three-inch high mats. The umbels of large one to two-inch flowers rise well above the foliage. The species color is magenta-rose. However, pinks, reds, and a pure white are available, all with notched petals, some deeply cut, lacey and frilled-truly beautiful. After flowering, the foliage dies and disappears. The rhizomes can then be easily lifted and divided-but need not be so often as other primroses. Because of this early dormancy and late spring appearance, it is a good idea to carefully mark the patches so you won't forget where they are and inadvertently dig into them!

Another lovely *Cortusoid* primrose is *Primula kisoana*. It has tufts of geranium-like leaves covered with white fuzz, surmounted by three to five rose colored blossoms. The leaves are not completely expanded until after flowering. It spreads by underground stolons - new baby plants appearing as much as a foot away from the parent-rather like the strawberry begonia (*Saxifraga sarmentosa*). When a good root system has formed on the offsets, they can be severed and transplanted into well-prepared soil. If the situation is to its liking, this primrose becomes a veritable ground cover. It can also be grown in the rock garden if partially shaded and well mulched with rock chips.

The last primroses to be considered here are the Candelabras. The members of this group are moisture lovers and thrive at bog's edge and pond-side. *Primula japonica* is the typical candelabra primrose and the one most often grown. It is quite tall and large leaved, commonly attaining a height of two feet. It will carry as many as six tiers of blossoms, the first tier opening close to the newly expanding leaves. As the stem elongates, succeeding whorls of bloom open for about three weeks, illuminating the transition of spring into summer. When fully open, the leafy clump is as much as a foot across, the foliage long and toothed. *P. japonica* prefers shade, but with adequate moisture at the roots will tolerate a sunnier spot, even the perennial border. The colors range from wine, through rose and pink, to white. As with *P. denticulata*, they come easily from seed and self-sow freely. By

culling the poorly-colored seedlings, one can obtain quantities of good color selections with little initial outlay. Some of the excellent named varieties obtainable as plants are 'Glowing Embers', 'Miller's Crimson', 'Alba', 'Pink Lady', and 'Rosea'. Because they are so prolific it is easy, when one has space, to have them in great drifts. When grown this way they truly light up the pond, stream-side or woods that is their home.

Candelabras go completely dormant in fall, retaining no leaves to mark their location through the winter, and since they resume growth very late in spring, one must be careful to mark or remember their location-and not despair of their reappearance.

Having been captivated by primroses, and wanting to try a large variety not easily obtainable, growing them from seed is the next logical step. Here is a simple method that works. Gather together in your work area the following materials: a very fine sterile planting medium such as Jiffy Mix, mixed 3:1 with sharp builder's sand; coarse grit or fine gravel; some paper towel cut to fit the bottom of your pots; labels and containers (I prefer square two and one-half or three-inch plastic pots). Place a small square of paper towel in the bottom of the pot to prevent washing of the medium through the drainage hole. By the time the towel deteriorates, the medium will have consolidated and will stay put. Fill the pot to the brim with the planting mixture and firm it gently but thoroughly with the bottom of a second pot to about one half inch below the pot rim. Add more medium if necessary. Until now your seed should have been in the refrigerator, secure in a jar with a tight lid. From the envelope, or a folded paper, tap the seed gently onto the surface of the medium-not too thickly. Try to keep them well spaced (about one-eighth to one quarter inch apart). Now cover the entire surface with a thin one-eighth inch layer of the coarse grit or fine stone chips. Label with the plant name, date, and any other pertinent information. Water from below until the surface of the medium is obviously moist. If the medium sinks drastically into the pot you didn't firm it enough. Place pots securely in a well-drained flat and place the flat in a spot outside where it can remain all winter. Cover flats with an old window screen to break the force of rain and exclude marauding mice and birds. Winter rain and snow should take care of your watering problems, but watch the weather and check if necessary.

Start looking for seedlings when the temperature has been at fifty degrees for a couple of weeks. When they appear, place flats in bright shade, keep moist but not soggy, and continue protection with screen. Seedlings are ready to transplant as soon as they are large enough to handle (usually when first true leaves have appeared). A planting medium consisting of fifty per cent Jiffy-Mix, twenty five percent sand, and twenty five percent garden loam (or a comparable mixture) should be used at this stage. The loam simplifies feeding as it helps retain the fertilizer in the mix, thus reducing the need for frequent feeding.

Using two and one-half inch pots, or flats, fill with the above mix. Again use paper towel squares in the pots, or a sheet of newspaper in flats to hold the medium in.

Prick out seedlings and set to just below the first set of leaves, one per pot and one to two inches apart in flats. Water from below and place beneath screens in the shade until established, at which time screens can be removed. Keep well watered and fertilize with soluble fertilizer at least once during the summer. Plant out in prepared area at *least* one month before expected frost to allow plenty of root development before winter. This will help prevent heaving. A light mulch of evergreen boughs after the ground has frozen also helps. Auriculas may not be large enough to plant out the first year and should spend the first winter in a cold frame or in an area protected from excessive moisture.

I would like to end with a quick reprise on primrose culture. In general, I hope I have convinced you that primroses are easy to grow if their basic requirements are met. All like rich soil, good drainage, plenty of moisture and some degree of shade. They should be divided every second or third year, with the exceptions noted, and replanted in well prepared soil containing plenty of peat or leaf mold, bone meal, wood ashes, and in the case of the denticulata, auricula and farinosa, plenty of fine stone chips or coarse gravel.

So you see-getting involved with a few pretty primroses can open up a whole new world of gardening. To quote Doretta Klaber, that marvelous grower and writer: "Beware! I warn you! Primroses cast a spell. The only way to avoid it is to have nothing to do with the plants. Once you start to grow primroses you are lost. You want more and more, earlier and later kinds, more varieties, more species, more colors. You start with a few plants. You are entranced. Soon your little patch spreads. You divide your plants because you want pools of one color. You raise primroses from seed to have them by the hundreds. A corner at the edge of the woods soon becomes a Primrose Path. The path grows, new paths branch off. Primroses are insidious, they are devastating-growing them becomes a habit. And few things can possibly give you so much pleasure in both anticipation and fulfillment."

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What Are Barnhaven Primroses?

By Jay Lunn, Hillsboro, Oregon

The term "Barnhaven primroses" probably infers many things and may depend a lot on the beholder. In Far North Gardens' 1988-89 catalog, Karen Krusinski, the proprietor, quoted Allen Lacy of The New York Times: "Florence Bellis's place in the International world of horticulture is assured, thanks to her achievement in originating - over many decades of careful and imaginative hybridization - the many strains of primroses collectively named after her Oregon home Barnhaven." In Florence Bellis' book *Gardening and Beyond* she wrote "Now the Barnhaven strains of primroses, in various forms, are known and grown everywhere." And, "Long after the Barnhaven strains had become horticultural history I was told that I had committed the cardinal sin of linebreeding." And finally, "But the most riveting, considered the outstanding polyanthus of all time, is the Barnhaven Cowichan strain begun in 1942." It appears that in the latter years, the name Barnhaven was applied to various strains of primroses that she developed and which were continued on by the Sinclairs and, subsequently, by Angela Bradford.

In Lew and Florence Levy's (later Florence Bellis) 1940 Barnhaven Gardens catalog, it listed: "Barnhaven Strain of Polyanthus, or Bunch Primroses, bearing many flowers on each stalk. Barnhaven Strain of Primula Acaulis, flowers borne on single stems rising from crown of plant." In the 1954-1955 catalog of Barnhaven Gardens there appeared: "These Barnhaven Polyanthus, which have come to be called 'Silver Dollar Primroses' because the size of each flower equals or exceeds silver dollar size, are beautiful plants." The term Silver-Dollar Primroses was first used by Florence in 1952. In Barnhaven Catalog No. 17, Silver-Dollar Acaulis Seed was listed. In 1974, Barnhaven double primroses (acaulis) were listed.

In 1968, Jared W. & Sylvia M. Sinclair assumed the task of growing the Barnhaven stock. Their 1979 catalog, included the following statements: "But what of Barnhaven? The work went on, the color range and reputation of the Barnhaven Strains waxed ever wider and they accumulated countless awards the world over." And, "Besides the continuing work on the polyanthus and primrose, the first seed strains of julianas were introduced (Wanda and Garryarde Guinevere are the most popular of the old-timers in this group). From seed sent from Cheshire by the late Captain Hawkes, seed strains of the old Elizabethan primroses were developed and from a portion of a weak little plant created nonchalantly by a wartime bee. In British Columbia the Cowichan polyanthus was rescued from certain oblivion. The late Mr. R. H. Briggs of Lancashire collected some seed from scraps of the almost extinct gold laced polyanthus he'd managed to salvage during the war and he sent Florence Bellis part of his harvest in 1945." And, "Her last contribution to the primrose world was the introduction of the famous Barnhaven double primroses

from seed, and she was almost trampled into the ground in the stampede that followed." Also, "Barnhaven's famous strain of this precious little flower [gold-laced polyanthus], and the only strain still in commerce maintained in the true tradition of those whiskery old artisan florists who clattered in their clogs along the cobbled streets of the smoky old towns so many moons ago." They continued the use of the term Silver Dollar Primroses. In addition to the primroses already mentioned, the Sinclair's also listed Barnhaven double auriculas and Barnhaven Sieboldii in the late 1970's and early 1980's.

As you can see, there is considerable justification for associating the Barnhaven name to strains of primroses, particularly the polyanthus. However, it appears that the Sinclairs produced double auriculas and *Primula sieboldii* plants and seed that were sold under the Barnhaven banner, so it could be argued that it has become a house name. They were also sold by Far North Gardens under the Barnhaven name. After Florence closed her nursery, she produced the seed for the Sinclairs, Far North, and a couple of other nurseries in the U.S. to grow double acaulis and gold laced polyanthus plants. Until Angela Bradford assumed the responsibility for carrying on the Barnhaven legacy, only the Sinclairs and Far North were using the Barnhaven moniker. In the 1992 Barnhaven Primroses catalog, Angela wrote "The Sinclairs added several new series to the original Barnhaven range, as well as developing the double auriculas and rescuing the lovely *Primula sieboldii* from oblivion."

BARNHAVEN'S
Famous
BLUE PRIMROSES

Acaulis of unsurpassed trueness and size resulting from years of selection and hand-pollination. Bred for sky blue, medium blue, indigo blue shades, heavy crepe textures, floriferousness, some silver-laced. Tested for high and speedy germination. \$1 pkt.

Other Hand-Pollinated Seeds
Brilliant Yellow Garden Auriculas.
Pastel and Vivid Julianas

Exhibition Polyanthus
Pink shades—Rich Victorian shades—Pastels—Grand Canyon shades (bronze, tangerine, terra-cotta, mahogany) Yellow and Orange, White, Scarlet and Crimson.

Separate colors and blended mixtures with accent on the unusual and new shades.

Complete descriptions, plants and seeds, in 1946-47 Catalog and Growing Guide.

Barnhaven Gardens
Gresham, Ore.

Barnhaven's
INTRODUCTIONS FOR 1956
Please turn to page 26 for descriptions of these Julianas

JULIANA PLANTS:

The Dove
Bounty
Gold Jewel
Firelight
Pearly Gates
New Dawn
Snow Maiden
Bouquet
Dainty Maid
Lavender Cloud
Maiden's Blush

and **Barnhaven** pink and blue strains of Julianas in packets of 10 seeds for 25c.

write for 1956 Supplement and 1954-55 catalog listing

Barnhaven Gresham, Oregon
(Lew and Florence Levy)

The Common Primrose

by Penelope Harrison, Yorkshire, England

Many erudite articles have been written about rare and difficult primulas; here are some thoughts concerning the common primrose, *Primula vulgaris* (Hudson, Fl. Anglica: 1762); *Primula* = "early blooming", *vulgaris* = "common".

Primula vulgaris is one of the best known and most loved of the wild flowers found in the British Isles. The first blooms in early spring (February and March) herald the arrival of warmer days to come. The common primrose is usually found in open woodland, occasionally on grassy banks, mostly in heavy soils. The plants love dappled shade provided by deciduous trees and shrubs. They do not appear to appreciate pine coniferous composts, even when used as mulches, possibly because coniferous composts and leaf molds are too sterile due to the naturally occurring insecticides found in the resinous barks and needles. Such sterile conditions prevent infestations of the flora and fauna usually abundant in deciduous leaf molds. The primroses appear to have a symbiotic relationship with this flora and fauna and do not thrive if it is not present. Plenty of farmyard manure and well-rotted garden compost will usually encourage these soil dwelling life-forms, though, and if the soil is right for the primroses, shade or lack of it is less critical. [Ed.'s note: Primroses thrive on the breakdown products of decomposition. They may prefer deciduous leaf mold because it breaks down faster than pine/coniferous leaf mold that may lack sufficient nitrogen when not fully decomposed.]

The common primrose is locally abundant, but is becoming rare in some areas due to over-picking and also destruction of its natural habitat. It has been picked for culinary and medicinal use since very early times, with accounts from various herbalists concerning its uses. The leaves were once boiled as "greens" - Leonardo da Vinci is quoted as stating they "are very appetizing but not very digestible". He suggested their use for bladder stones; Culpepper recommended the boiled leaves be made into a "wound salve" (ointment), while Gerard suggested they could cure a "phrenzie". Modern uses are as an expectorant for bronchitis, using the dried root stock, and as a mild sedative using a tisane made from fresh flowering plants. The flowers can be candied and used as cake and sweet decorations. A word of caution: some people are allergic to all *Primulaceae*. The most noticeable reaction is a form of dermatitis from the primin in the plant tissues. Ingestion of primula parts by sensitized individuals will similarly cause an allergic reaction.

The wild primrose has a delicate pale yellow single flower that has occasionally spontaneously mutated to give several distinct forms and flower colors. Some of these forms make good garden-worthy plants and most are reasonably easy to acquire. 'Garryard' forms, strictly speaking, are a polyanthus type but some have single

single flowers with bronzed reddish stems and leaves. These first occurred in Garryard, County Kildare, and are propagated by division. The plant itself needs to be split every two or three years, ideally after flowering.

A great curiosity, known since the 16th century, is 'Viridis' - the Green Primrose. The petals are a delicate lime green, either leaf-like in texture or a typical flower petal. They may also be either single or double. This plant is incredibly rare and presumably expensive if you can find anyone willing to sell you a piece.

Other double forms have appeared in the wild from time to time and have made good garden plants. Easily acquired ones are 'Sue Jervis', a delicate salmon pink; 'Elizabeth Dickey', a clear yellow double from Northern Ireland; the old 'Lilacina Plena' (Double Lilac or Quaker's Bonnet) a delicate lavender-lilac; and the old 'Alba Plena' (Double White or Gerard's Double White). These last two are delightful plants marred only by their thin flower stalks, whose double flowers usually end up face down in the dirt. There are a number of modern hybrids that have been micro-propagated for the mass market. They are perfectly useful and pleasant plants, but they can repay this treatment by over-lush growth and flowering themselves to death. They are not always frost-hardy, nor do they appreciate extremes of temperature and availability of ground-moisture.

A very sturdy and highly recommended plant is the double "Jack" called 'Dawn Ansell', that can flower on and off all year and laughs at snow, hail, gales and heavy rain. "Jacks" are part of a group of plants with mutated parts that were first noted in the Middle Ages and whose common names reflect fashions and beliefs of that time. Jack-in-the Green commemorates a pagan fertility symbol that was Christianized about then, a face in a circlet of leaves, variously known as Jack-in-the-Green or The Green Man. The symbol was frequently used as a "boss" on the vaulted roof of a church and has persisted to the present day as a Public House name. Early gardeners of whatever religious persuasion thought the flower in a circle of leaves - the mutated calyx - looked similar to this symbol, and gave the plant the same name. Jack-on-Horseback or Jackanapes-on-Horseback has a tuft of leaves halfway down the stem, polyanthus style. This name, also related to pagan symbols, commemorates the Green Man of the Forest, Hermes the Hunter. "Jacks" make very good garden-worthy plants, being sturdy and frost-hardy; some are easily acquired, others are not. The other, most often seen form is the Hose-in-Hose, where one flower emerges from the center of another, a sort of semi-detached double. Its common name came from the fashion for (men) wearing two pairs of stockings (hose), one full length to the groin, the other ending at the knee. These were often kept up (at the knee) by a rosette decorated garter, perhaps the original "Gallygaskin", but no one is sure.

Growing the common primrose can lead onto other paths - many growers collect old or modern prints and paintings of their favorite flowers. Others paint their own

with all the forms documented, and as can be seen, sometimes this background is quite unusual. I hope that some of you reading this may be tempted to try the common primrose - the "prime flower" of the Middle Ages which was praised as "the fairest and the best".

Vulgaris The common (and beloved) primrose, with a distribution through the British Isles and the length and breadth of Europe, far away into Asia Minor, Armenia and Turkestan. The many-colored scapeless horticultural hybrids which stem from vulgaris are by common consent called acaulis and are sold under that name, which, after all, is as precise as vulgaris which is the specific name for the type. There is never a scape on the type vulgaris, but the flower stalks, each carrying a single flower, usually covered by septate hairs, are from 2 1/4-8" in length and more or less equal the length of the leaves. The flowers are pale yellow, or rarely purple or blue, becoming greenish in drying, calyx ovate, tubular, 5 ribbed with narrow-lanceolate, acuminate lobes; corolla tube cylindrical, the limb flat, 1- 1 1/2" across, with obcordate emarginate lobes, the throat slightly contracted and bearing a circle of scale-like folds. Capsules ovate, included in the calyx. The leaves are many, tufted, wrinkled, membranaceous, oblong or obovate-oblong, apex obtuse, gradually, rarely and evenly narrowed to the petiole which is shorter than the blade, sometimes sessile more or less pilose or glabrescent, crenulate; the petiole more or less winged. This species appreciates shade and humus but is practically indestructible in the garden and is beautiful as a border edging. The list of vulgaris varieties to follow is very much condensed due to space: *vulgaris subsp. balearica* from Majorca is identical with the type except that it has "pure and solid golden-eyed white flowers." *vulgaris subsp. heterochroma* "The Caspian Primrose," is separated from the type by the undersides of the leaves which have a "cobwebby-tomentum," and by the wide range of color of the flower, white, rose, purple, violet or citron yellow. *vulgaris subsp. Ingwerseniana* (now considered part of *subsp. sibthorpii*) was collected by W. E. Thomas Ingwersen "in early summer of 1929 on Mount Olympus, a day's march 2-3,000' above the Monastery of Dionysus, this being the nearest human habitation."

vulgaris subsp. sibthorpii the "Caucasian Primrose," differs from the majority of its allies within the complex of vulgaris "in the colour of the corolla, which may be purple, rose, lilac, white, red or crimson, to the practical exclusion of yellow." It is best to plant this subspecies with some protection, although it is perfectly hardy, as it blooms during the earliest months of the year and is lovely when not battered by the elements. [Reprinted from the *American Primrose Society Pictorial Dictionary of the Cultivated Species of the Genus Primula*, 1948]

Primula Juliae

by Mary Kordes, Ahmeek, Michigan

The Caucasus Mountains, in southwest Russia, were one of the last mountain ranges offering unexplored territory. Julia Mlokossjewicz was raised in this area and accompanied her Polish-born father many times as he explored this rich mountain range for botanical specimens. She continued to be an avid naturalist into adulthood and, on 20 April 1900, while exploring these slopes of her homeland, she discovered a tiny primula growing with moist mosses along a mountain stream.

This charming little species was named *Primula juliae* in honor of its discoverer. Though some feel it may have reached England earlier, it wasn't until 1911 that seed from this new species was sent to Oxford. The following year *P. juliae*, pronounced "jul-ee-ee", was introduced to the world when a plant was exhibited at the Royal Horticultural Society show and received an Award of Merit.

Primula juliae is the smallest species in section *Primula* of the subgenus *Primula*, a veritable jewel of the primula family. The unusual morphology of its root system, the fact that it is stoloniferous, sets it apart from all other species in its section. Its short stolon is a somewhat thickened root that travels laterally just under the surface of the soil, branching to allow the plant to spread and form mats. This petite species has been used to cover large areas, not only for its beauty, but also because of its ability to hold soil in place.

The leaves of *Primula juliae* form loose rosettes, growing from nodes along the stolon where new feeder roots develop. The nearly rounded leaf blades are small, less than 1 1/2 inches in diameter with a cordate, heart shaped, base. They're dark green and being glabrous, lacking hairs or meal, are glossy. The leaf stems, correctly referred to as petioles, are up to 3 inches tall, slightly winged, and pink or streaked with red. Growing a new leaf rosette on a stolon induces the plant to grow two new stolon branches from the existing tip, allowing the plant to spread. In its winter dormancy, *Primula juliae* dies back to pink resting buds that are visible on the soil surface. New leaves will grow from each bud in spring.

Primula juliae's bloom habit is also unique as its flowers grow from the fork where the new stolon sections developed rather than growing, in the usual manner, at the center of a leaf rosette. Several blossoms emerge at each juncture, producing sheets of cheerful blossoms to cover the mat in early spring.

The flower of this plant, the corolla, is brilliant purple-pink with a tiny yellow eye. The corolla is one inch in diameter and consists of five brightly-colored lobes, the petals, with a deep cleft at the tip of each lobe. The tube of *P. juliae's* blossom is so long and slender it hardly looks capable of supporting the corolla, but still contains the stamens, and the stigma, style and ovary for reproduction. The tube flares at the top where it meets the lobes but is long and cylindrical, finally nestling

into a pinkish ribbed calyx. The flower stem, or pedicel, which is reddish-streaked, holds the blossoms above the leaves. There is an alba, or white, form of *P. juliae* but it is seldom offered.

It was discovered that the pollen of *Primula juliae* was compatible with that of other species in its section and, immediately after its introduction, it became the darling of plant breeders in the United Kingdom and Europe. Crosses were made in both directions with *P. vulgaris*, *P. elatior*, and *P. veris*, producing lovely hardy hybrids. These hybrids were formerly known as *Primula juliana*, but are now correctly named *Primula x Pruhoniana*.

Many *x Pruhoniana* cultivars have been raised from *P. juliae* crosses, but *P. 'Crispii'* was the first named plant to be shown and introduced to gardeners. The result of a cross between *P. juliae* and *P. vulgaris*, it received an Award of Merit in 1916 from the Royal Horticultural Society in England. There are at least two forms of *P. 'Crispii'* in cultivation now, each a different shade of pink.

P. 'Wanda', the best known of all *Primula juliae* hybrids, was introduced in 1919 when it also earned an Award of Merit. This lovely free-flowering cultivar is a rich reddish-purple, achieved through crossing *P. juliae* with a red *P. vulgaris*. 'Wanda hybrids' are now circulating, so shop with that in mind, remembering that named plants can only pass their name on to their progeny through division, never through the seeds of that hybrid.

Primula juliae contributed its bright color to numerous offspring but, through years of crossbreeding, the *x Pruhoniana* now display nearly every color found in the primula family. The most desirable hybrids retain the small stoloniferous habit of their *juliae* parent, but even the rosette forms are beautiful in their smaller size. The rosette forms grow flower stems from within their rooted leaf rosette, rather than separated from the leaves along a stoloniferous root system.

There are many *x pruhoniana* hybrids, including the *vulgaris* form with a single flower to a stem, stalked forms with the "polyanthus-look", Jack-in-the-greens with a ruff of tiny leaves below the blossom, and Hose-in-hose forms displaying one corolla within another. They offer so much diversity, and are all beautiful.

Double-flowered *juliae* hybrids have appeared in some breeding programs. I have a tiny semi-double charmer that was hybridized by Dr. Ralph "Herb" Benedict many years ago. It has inherited the small stature of its *P. juliae* parent, being only four inches tall when in bloom. It has dark green foliage and a rose-pink corolla with small white dots at the cleft of each petal. A small amount of yellow is visible at the base of the petals. I have named this lovely plant 'Herb's Gift'.

Experts suggest a moist soil rich in humus as the best growing medium for *Primula juliae* and its offspring. Here, now, is where paying attention to a plant's natural habitat is important. Remember the moist, mossy area in which this plant was first discovered? It was amongst rocks along a mountain stream. Drainage would have

been excellent, running off the edges of those rocks. This plant needs moisture but cannot tolerate overly wet soil.

I've found growing my *P. juliae* and her children in a rock garden situation, with plenty of rocks, has been quite satisfactory. The rocks insure drainage while still holding enough moisture and keeping the soil cool. I enrich our poor soil with a little compost or aged manure, but must warn that too much nitrogen will encourage the plant to form excess leaves at the expense of flowers. Partial shade, with a bit of morning or filtered sunlight, is a must. Deep shade would result in more foliage but fewer blossoms, and full sun would burn and destroy the plant. Lightly mulching with leaf mold helps to keep the roots cooler and encourages good growth throughout the heat of summer.

Any of the *Primula juliae* clan, species or hybrids, can easily be propagated from seed or division. Harvest seed when the seed capsules are tan, but not opened, to avoid the risk of seed spillage. Division is best accomplished immediately after bloom by separating the stolons or, in the case of those growing as rosettes, separating the crowns. They can be divided often to start more plants, or replanted into loose colonies to form larger mats.

A feeding program for *Primula juliae* calls for a half-strength application of a fertilizer low in nitrogen, but containing more phosphorus and potash, very early in spring. Some growers use a product designated as "tomato fertilizer" for this application, as it has the proper component ratios to encourage blossoms and root growth. Fertilize again after the bloom period, this time with a balanced fertilizer to carry the plant through the summer months. Water as necessary to keep the soil moist but not soggy. Conscientious growers feed again in fall, this time with a half-strength application of a fertilizer with no nitrogen (0-10-10), to assure a healthy dormancy.

If you grow your primulas in pots, Viv Pugh, an excellent grower in England, suggests using a gritty, very lean, planting medium, but only for the species *Primula juliae*. She finds the plants produce more blossoms when the soil mix isn't rich, but cautions she does not grow the hybrids of *P. juliae* in pots.

As with so many plant genera, primulas reached the United Kingdom and Europe before finding their way to North America. Collectively, however, hybridizers have named approximately 100 *Primula juliae* hybrids, far too many to list here, but many of them originating in the United States. Though some have disappeared through the years, hybridizers continue to introduce more of these hardy, colorful plants. Search for them, as I am doing, as they make lovely additions to any garden. And try hybridizing them yourself, for you may produce an even more beautiful *Primula x pruhoniana*!

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The Garden Polyanthus

by Angela Bradford, Plestin Les Greves, France

Nobody seems to know the exact origin of the plant we now call the polyanthus. Best guesses seem to be that it was originally a natural hybrid between the common primrose (*Primula vulgaris*) and the cowslip (*Primula veris*). The two species hybridise readily where they grow together, and produce a plant - the "false oxlip" - which is showier than either of its parents. Primroses and cowslips are mentioned in the early herbals as they were believed to have many therapeutic qualities and there is no doubt that both primroses and cowslips were grown and appreciated as garden plants from quite early in the middle ages. However, there is no clear indication of when the false oxlip started to be appreciated as a different plant in its own right. By the time Parkinson is writing (1629), we find that that the ordinary wild primrose was not thought worth growing in gardens. Although he does not use the word, there is no doubt that Parkinson is describing garden forms of polyanthus but with nearly all the flowers he describes are yellow, white or green. Yet when we get to the eighteenth century and the beginnings of the polyanthus as we know it today, all the flowers are in various shades of red and remain so until the end of the nineteenth century. Where did the red come from?

In 1640 Parkinson wrote of "Tradescant's Turkie purple Primrose", probably a reference to one of the purplish variants of the primrose (now known as subspecies *sibthorpii* and *heterochroma*), which are found from Greece eastwards. John Tradescant was England's first true plant explorer and it is likely that he brought back these purplish primroses. Certainly, a generation after Parkinson, John Rea (1665) is writing about a "red Cowslip or Oxlip". The word "polyanthus" seems to have been first used for a type of primula in the 1670's and the earliest known illustration described as a polyanthus is in the 1687 catalogue of the Botanic Gardens at Leyden.

Around the beginning of the 1700's, lacing began to appear on the polyanthus petals. By the 1780's, the Gold Laced Polyanthus had arrived and was being bred to produce larger, flat flowers with even lacing which reached the centre of the flower. For more than a century, most polyanthus which are described in books or catalogues are dark red or brown with gold lacing. The modern brightly-coloured polyanthus are taken so much for granted now, and are often referred to as "old-fashioned flowers", that it is difficult to remember that they are, in fact, only about a hundred years old. Gertrude Jekyll, the celebrated English garden designer, had two light-coloured polyanthus, a mottled bronze and a near white. She planted them together, selected out their offspring and by 1880 had produced the first pure yellow polyanthus. After a few years, she was able to market her "Munstead strain" of yellow and white polyanthus. Later, Anthony Waterer added Miss Jekyll's new colours to his own reds and produced new shades of reds and mauves.

By the 1920s the polyanthus was established as a popular plant for spring bedding,

and many of the seed firms were offering their own strains. New colours were being introduced, but the best amongst them was Sutton's "Brilliance" with "showy orange and red shades". And by chance, it was Sutton's catalogue that Florence Bellis saw. Much has been written elsewhere about Florence and the way she overcame poverty and ill health to produce the Barnhaven strain, so I do not propose to tell the story again here. But perhaps this is the place to pay tribute to her. She is very seldom mentioned when the milestones in plant breeding are written about, yet it was she who pioneered the technique of rigorous selection of parent plants and hand pollination which we take so much for granted now and which enabled her to achieve results far more quickly than had been imagined possible before her time. Among her many achievements there are two outstanding. The first was the breeding of the Cowichan strain from the one chance seedling with smouldering red eyeless flowers and bronze foliage, which appeared in a garden in Cowichan Station, British Columbia. The second was to breed the first truly pink strain of primroses and later polyanthus, from the one plant with pink flowers that was found by Linda Eichman. All modern day polyanthus with pink flowers derives from this one plant and it was Florence Bellis who fixed the colour.

Of course, Florence Bellis was not the only one to be working on the polyanthus. For example, Frank Reinelt also started with Sutton's seeds. During the late 1930s, and inspired by Florence Bellis's work, he started a programme of hand pollination to produce a strain of polyanthus with strong, bright colours that would show up well in the southern sunshine. They were rigorously selected and hand-pollinated under glass. These Pacific Giants came into flower early in the mild Californian climate and were delivered in large quantities to the cold North East where their clear, bright colours and large flowers assured a commercial success. The Pacific's found their way into many of the modern strains. In most cases, however, in an attempt to produce seed more cheaply, seed was segregated in colour blocks and pollination was left to nature and, inevitably, the strain deteriorated. It also became apparent that years of selection under glass in mild California had bred out much of the polyanthus's winter-hardiness. A severe winter in the USA in the mid-sixties killed most of the polyanthus that were planted out of doors, and their popularity declined. Sakata of Japan took over Frank Reinelt's strains, and re-established the colours, but these plants are now specifically intended for pot-culture, so it is important when selecting polyanthus to read the description carefully to be sure you are buying appropriate plants or seeds for either pot or garden culture.

Polyanthus do best in neutral or slightly acid soil. They all appreciate partially shaded positions and large quantities of organic matter. If your soil is sandy, thin or alkaline, your primulas will probably never be happy enough to form established clumps, but you can still grow them as annual bedding plants as long as you grow them in the shade, incorporate as much humus as possible and make special efforts

to water in dry weather. Most modern polyanthus are bred to be hardy and are tolerant of a large range of conditions. But the wild plants from which they are descended are woodlanders and the plants are happiest in humus rich, well drained soil, which should not be allowed to dry out. The ideal place would be on a slope under deciduous trees or in a north or east facing bed. Full sun on frozen foliage; freeze/thaw conditions over a long period; waterlogged conditions in winter especially if the ground freezes; or hot, dry conditions in summer are all likely to be fatal. If you expect the first two of these conditions, then the plants should be protected with a loose covering of autumn leaves, wood shavings, bracken, or evergreen branches. All plants benefit from being divided and replanted every two or three years. For best results, feed the plants with a weak solution of high potash or tomato fertiliser every ten days from the time the buds start to form until the first flowers open. A "thank-you" feed when flowering is finished also helps, but don't feed late in the season and don't use high nitrogen fertilisers.

Polyanthus can be divided either immediately after flowering, or in the early autumn. I prefer to divide in September and find that the divisions establish quickly to give robust plants full of flowers the following spring. Dividing in May gives your plants a longer growing season, but exposes the young plants to stress from heat and drought when they are at their most vulnerable. However, if you live in an area with severe winters that start early, you should divide in May and pay particular attention to shading and watering.

Lift the plant with a fork, taking enough soil to avoid tearing the roots. Shake off as much soil as possible. If the soil is very heavy or sticky, you may have to wash the soil away from the roots. Leaving the plants standing in a bucket of water for an hour or so will make this easier.

Tease the tangled roots apart with your fingers. If you are lucky, the plant may fall into separate crowns. If not, using a sharp knife, cut down through the fleshy rhizome that binds the crowns together. Try not to be too greedy as larger pieces stand a better chance of establishing, but small pieces that break off can be planted in any case. Discard the old woody centre of the plant. The roots should be pruned back (again using your resharpened knife) to lengths of about four inches (10 centimetres). The pruning has two functions. It encourages the growth of a fibrous root system and the shortened roots are less likely to be damaged when replanted. Cut off the oldest, largest leaves to prevent too much water loss after planting. Throw each prepared division into a bucket of clean water, so that they are full of water when you replant them.

Plant out your divisions either in their new flowering position or in a temporary bed. Primroses don't seem to resent being moved again as long as you take plenty of the surrounding soil and keep them well watered. Water in your new plantings with a half strength solution of high potash fertiliser. Keep the plants moist and

The Drumstick Primrose

By Pam Eveleigh, Calgary, Canada

If you've never seen *Primula denticulata*, the "drumstick primrose", then you might just wonder what kind of plant could deserve such a name. But that name aptly describes the look of this beautiful primrose. It forms its flower buds in the late fall, holding them until early spring in the center of a large resting bud. The flowers start opening before or just as the leaves start to grow and at that time the whole inflorescence is tucked down in the center of the plant. As it continues to grow the flower stalk elongates and more flowers open, until the plant consists of a ball of flowers perched on top of a stout stalk. It then looks like a drummer's stick.

Primula denticulata is found in a large area of the Sinohimalaya and is variable throughout its range. It grows in wet, open meadows. Plants in the wild are usually a soft purple with a yellow eye, but flower color in cultivation ranges through stunning shades of red, blue, dark purple, pink and white. Many of these selections have been named and offered in the nursery trade. The size of flowering plants also varies from a few inches to a normal 13 inches tall (18 inches in fruit). Though the leaves are small and just starting to grow when the plant is flowering, they eventually expand to 12 inches or more. Give individual plants lots of room! Fortunately the leaves are deciduous and disappear in readiness for next spring's flowering display. Some gardeners have been known to move their plants to a holding bed after flowering so they don't take up so much room. The plants are moved back once they have formed resting buds.

There is only one subspecies of *Primula denticulata*: *ssp. sinodenticulata*, which is found in Burma and China. It is distinguished by its extremely long flower stem that can be up to 6 times the size of the leaves! Related primulas include *P. cachemiriana* and *P. glomerata*. Both are readily found in cultivation and exhibit a drumstick appearance.

Primula denticulata has been in cultivation since the early 1800s. It is easily grown in fertile, moist soil in part shade. It grows equally well in acidic soils or limey soils. Like any primula, it prefers not to dry out, but I have found the large leaves act as an indicator that my flower beds need water. Once the leaves start to droop then water the plants immediately. If they are dry for too long, then watering may cause rot rather than recovery! Primulas are heavy feeders and *Primula denticulata* will benefit from a rich soil, a yearly top dressing of compost and regular fertilizing.

Plants can last for many years. They can be moved but the thongs, or thick anchor roots break easily. Try moving the plant with the soil intact around the roots to maintain their spread. If the plant is already bareroot, then gently fan the roots out and cover them with soil. It is less difficult to plant out young plants and they grow vigorously. If you do move your plants and the roots break, don't despair. Root

Denticulata Most abundant in the W. Himalayas at 7-12,000'. It is said that this species, which has been in cultivation over a hundred years, is one of the best "propaganda" agents in the genus. It has captured the interest of people who have seen it in the market place, for it is easy to procure, it is not expensive, it is easy to grow and keep, and rewarding in being both hardy and handsome. Mr. F. H. Fisher writes that "The thrill of seeing the lavender-flowered, heavily powdered cachmeriana form of this *Primula* started one beginner collecting every species of *Primula* to be obtained in nurserymen's catalogues and paved the way in turn to a collection of *Meconopsis*, and later *Gentians*. (AGSB: Vol. IV, p. 79) The leaves are narrow and crinkled 6-12" in length. The crowns are very large and the leaves wither after flowering and leave a winter bud consisting of rudimentary leaves and scapes. Flowers appear before the leaves and are braced up by their large "rufous-coloured" scales, and young erect leaves.

P. denticulata may be increased by root cuttings. Sir George Wan, originator of the Section *Denticulata*, wrote that in Bashahr the flowers of *denticulata* are regularly eaten in salad, and the powder of the roots is held to be of value in killing leeches. *P. denticulata* seeds itself at Edinburgh, is grown superbly in Western Canada, many Washington enthusiasts have collections of its many color forms, and it has met with success in Pennsylvania and New York. It is very important to save seeds of the best color forms so that the muddy colored ones may be discarded. The only way to do this is to hand-pollinate immediately upon opening of the buds or to isolate the two parent plants from any of- their kind. When the resultant plants bloom it is well to continue the process ever seeking purer colors and better forms. The flowers and even the stalk length vary considerably in size, in nature and in cultivation, according to its location and the components in the soil. The finest blue forms have been raised in conditions favored by rhododendron. The scape may reach 20" at flowering time. The color of the inflorescence varies from pale lilac to a bluish mauve-in the type. The variety *alba* and all the lovely colors which have been developed into the crimsons by careful selection and breeding are well worth space in the garden. Jellito advises that we sow the seed immediately when it is ripe, or not later than the following Winter.

[Reprinted from the *American Primrose Society Pictorial Dictionary of the Cultivated Species of the Genus Primula*, 1948]

Photo right: *P. Pruhoniciana* 'Dorothy' (left & center); Unnamed hybrid deep pink (center); *P. x P.* 'Millicent' pink (right front); *P. x P.* 'Purpurkissen' purple (upper right); *P. x garryard* 'Guinivere' seedling with bronze foliage (top, right of center); unnamed hybrid deep pink (top right).



Barnhaven Gardens 'On the Hill' Gresham, Oregon 1962. Orval Agee photo



Primula Juliana hybrids in Mary Kordes garden. See caption box to left. Mary Kordes photo.



Polyanthus Primroses.



Primula denticulata 'rubra'. Photo Mary Kordes



Primula vulgaris. Orval Agee photo.



P. marginata 'Linda Pope'. Jay Lunn Photo.



P. marginata 'Ivy Agee'. Jay Lunn Photo



P. japonica white



P. japonica red



Wild collected P. sieboldii, Fukushima Japan. Matsumoto Sakurasoh & Primula Club photo

American Primrose Society

52nd National Show

Sponsored by the
British Columbia Primrose Group

Saturday, April 20

Sale 10:00 am to 4:00 pm

Show Noon to 4 :00 pm

Sunday April 21, 2002

Sale and Show 10:00 am to 1:00 pm

Mini Symposium will include talks by
visiting British and local Primrose specialists

Displays by Artists and Nurseries

Cedar Room
Van Dusen Botanical Gardens
5251 Oak Street
Vancouver, BC Canada

Registration information:
phone: (604) 298-8384
or (604) 733-1604
email: rchong@axion.net

**American Primrose Society, 52nd National Show,
April 20 and 21, 2002
Vancouver, BC, Canada Sponsored by the B.C. Primula Group**

Schedule of Classes

Division I

European Primula (excluding Florist and Garden Auriculas and all Vernales primroses)

- Class
1. Section Aleuritica, all types
 2. *P. allionii* and hybrids
 3. *Primula marginata* and hybrids
 4. Other European *Primula* not included in class 1 - 3 (including *P. auricula* species and *P. x pubescens*)

Division II

Section Vernales Primula

- Class
1. Species (*P. veris*, *P. elatior*, etc.)
 2. *P. x julianas*
 3. *P. acaulis* hybrids
 4. Polyanthus (excluding Exhibition Gold-Laced Polyanthus)
 5. Cowichans
 6. Doubles
 7. Exhibition - Gold- or Silver-Laced Polyanthus. Thrum-eyed plants only. Must have five open flowers.
 8. Seedling Section Vernales, any type
 9. Anomalous and oddities

Division III

Auriculas

- Class
1. *P. auricula* - Garden
 2. *P. auricula* - Picotee
 3. *P. auricula* - Doubles
 4. Exhibition Alpine auriculas (Judge may divide into light- and gold-centred). Must have five open flowers.
 5. Exhibition Alpine auricula — Seedlings
 6. Show auricula - Edged. Pips must have five open flowers.
 7. Show auricula - Selfs. Pips must have five open flowers.
 8. Show auricula - Fancies and Stripes. Pips must have five open flowers.
 9. Show auricula - Seedlings
 10. Anomalous and oddities

Division IV

Primulas Other than European - Including North American and Asiatic

Division IV

- Class
1. Section Proliferae (*Candelabra*)
 2. *P. denticulata*
 3. Section Oreophlomis, including *rosea*, *luteola*
 4. *P. sieboldii*
 5. All other Asiatic species, including *P. cortusoides* (not *P. sieboldii*) *P. kisoana*, *P. polyneura*
 6. All North American species

Division V

Greenhouse (non-hardy Primula)

- Class
1. *P. obconica*
 2. *P. malacoides*
 3. Any other

Division VI

Primulaceae

- Class
1. *Cyclamen* (in bloom)
 2. *Dodecatheon*
 3. *Soldanella*
 4. *Androsace*
 5. Any other Primulaceae

Division VII

Troughs

- Class
1. Trough planted with primulaceae with a length or width not longer than 24 inches
 2. Trough planted with primulaceae with a length or width not longer than 12 inches

Division VIII

Decorative Foliage

- Class
1. *Cyclamen* out of flower
 2. *Primula* out of flower
 3. Any other primulaceae out of flower

Division IX

Grower's Exhibits (any large, unusual or oversize container or exhibit not meeting criteria for above classes)

- Class
1. Grower's exhibit of *Primula*, six or more plants in one container
 2. Grower's exhibit of *Primula* and/or any other primulaceae

Rules for Exhibitors

General

1. All classes are open to any exhibitor.
2. One each of first, second and third ribbons may be awarded in each class.
3. If any class does not have an award considered worthy of a prize, no prize will be awarded.
4. All plants must have been grown outside except for Division V, Greenhouse Primula. Glass covering for protection from the elements is permitted.
5. All plants must have been the property of the exhibitor for at least six months.
6. All decisions of the judges will be final.
7. It is understood that neither the B.C. Primula Group nor the VanDusen Garden will be held responsible for loss or damage to property or person.

Staging

1. Entries may be benched on Friday April 19th from 6 p.m. to 10 p.m. and on Saturday, April 20th from 8 a.m. to 9 a.m. at which time the hall will close for judging.
2. No one is allowed in the exhibit hall while judging is taking place, except for assigned judges, assistant judges and clerks.
3. An exhibitor can enter any number of plants in all classes.
4. All plants exhibited must be clearly marked with the name of the plant on cards supplied.
5. Each entry must have an entry form, available at the hall, filled in appropriately.
6. Each exhibitor will bring plants in his or her own clean containers, with plants groomed to show standard. Top dressing is permitted.
7. Assistance in staging plants will be available at time of benching.
8. Plants incorrectly staged will not be penalized, but will be moved by the show steward to the appropriate class on discovery of the mistake.

Show Management

1. All exhibits are to be handled only by the exhibitor or by the show steward. Exhibitors must not handle any other exhibitor's plants. Ask for assistance of the show steward.
2. All exhibits will be under the control of the show steward and his or her assistants, and shall not be removed until the end of the show without the show steward's consent.
3. The show will close at 1 p.m. on Sunday, April 21st and all exhibitors are expected to remove their plants promptly at the end of the show.

Novices

1. A novice is an exhibitor that has not won in any other APS show.
2. Any novice must mark their entry form with an N in the top right corner of entry form to be eligible for novice prizes.

The following trophies of the American Primrose Society will be awarded

Bamford Trophy for Best Edged Show Auricula Seedling
Ivanell Agee Trophy for Best Hybrid Juliana
Rae Berry Trophy for Best Species
Frank Michaud Trophy for Best Named Show Auricula
John Shuman Trophy for Best Alpine Auricula
John Haddock Trophy/C.F. Hill Trophy for best seedling alpine auricula
Ellen Page Haydon Trophy for best double auricula
Wesley Bottom Trophy for best hose-in-hose primula
Ivanell Agee Trophy for best exhibition gold-laced polyanthus seedling
Agnes Johnson Trophy for best exhibition gold-laced polyanthus
Captain Hawkes Trophy for best exhibition gold-laced polyanthus
Mary Zack Trophy for best show self auricula
Kerridge Award for most species in bloom
Herb Dickson Award for best picotee auricula

Bringing Plants to the Show

Important note to all those wanting to bring plants to the Show from the US. Agriculture Canada requires a Phytosanitary Certificate. You will need to contact a representative from the USDA for an inspection ahead of time and pay a fee. You must declare plants at the border and you should allow extra time to cross.

The BC Primrose Group has also arranged a mini symposium with speakers on Saturday afternoon and Sunday morning. The cost for these will be \$5 CDN each for \$15 CDN for all. Tickets will be available at the Show.

Speakers for Mini Symposium

Jay Lunn	Primula Species of North America
MaedytheMartin	Striped Auriculas Old and New
Andree Connell	Hardy Cyclamen
John Gibson	Primula Judging Workshop

John Gibson will be the Banquet Speaker. His topic will be: "Primula allionii and Other European Primula." Banquet Information and registration is noted below.

Show and Banquet Locations

The National Show will be held at the Van Dusen Botanical Garden located at 5251 Oak Street @37th Ave; Vancouver, BC V6M 4H1 Canada. From the Garden, it is 45 blocks up Oak Street to the following hotel where the Annual Meeting and Banquet will be held on Saturday night. A convenient bus line connects the two sites.

The Coast Vancouver Airport Hotel has agreed to offer Show attendees a special rate of \$79 CDN, \$50 US per night. Contact them at 1041 S.W. Marine Drive; Vancouver, BC, V6P 6L6; Canada; phone 1-604-263-1555 or fax 1-604-263-0245. The Banquet will be catered by the Coast Vancouver Hotel's White Spot Restaurant Saturday Night at 7:00.

Banquet Menu Reservation Form

Oven Roasted Herb Chicken ____ @\$22 CDN or \$15 US

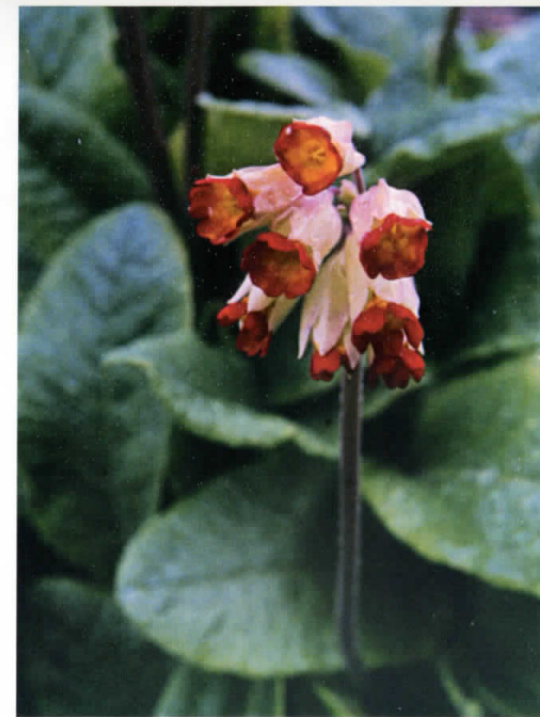
Penne Primavera w/marinara ____ @\$22 CDN or \$15 US
(Vegetarian)

Please send Banquet reservation w/menu choices and check to:

Ruby Chong
6870 Union St.
Burnaby, British Columbia



P. veris, Mary Kodes photo



P. veris red, Ed Buyarski photo



P. elatior APS File photo



P. elatior, Henry Pugh photo



P. auricula species, APS file photo



P. auricula garden hybrid, Ed buyarski photo



P. auricula alpine hybrid seedling, Agee photo



P. florindae, APS file photo



Assorted Garden Auricula grown by Herb Dickson, Past APS President, and owner of Chehalis Rare Plant Nursery, April Boettger photo



P. kisoana Berry Botanical Garden, Ed Buyarski photo



P. kisoana 'alba', Rhododendron Species Foundation Garden, Ed Buyarski photo



P. auricula garden hybrid 'Dales Red'



Polyanthus Primrose 'Gold Laced Polyanthus' grown and photo in the garden of John O'Brien, Juneau, Alaska



P. sieboldii, 'Thelma', Ed Buyarski photo

"Primroses are wonderful flowers with so wide a selection of species and hybrids that you can grow some type of primrose any place in the world where water is available for the cultivation of plants. If you tell other people about primroses they become interested. If you explain the benefits of membership in the APS to these interested people you will get new members. In this hectic atomic world of today, time and money are at a premium. Do not sell primroses and the APS short. They both offer high returns for the time and money expended."

Herb Dickson, newly elected APS President's Message, Summer 1961

cuttings are a recognised method of propagating *Primula denticulata* so the remaining roots may form into new plants. *Primula denticulata* can also be propagated by division after flowering. The individual crowns are teased apart and replanted.

Primula denticulata produces a head of many small capsules containing fine seed. Examine the capsules closely to see when they change color from green to brown and when the end of some capsules open into a star-shape. The seed is then ready to be collected by either shaking the head over a bowl or bag, or by gently crushing the capsules and sifting the results through a fine sieve to remove the chaff. Prolonged exposure to wet when the seeds are maturing may produce a poor yield and mouldy seed. The seed exchanges usually offer garden collected seed and wild seed is introduced regularly. Seed germinates quickly when sown immediately and can be sown directly into the garden. You will likely find that your plants will start self sowing anyway. Seed may be stored in the refrigerator for later years though viability is reduced over time. Plants generally bloom in their second year from sowing. If muddy colored plants appear, then pull them out and keep the better color forms.

Primula denticulata is a hardy plant. It can easily survive long cold winters such as those in Scandinavia and Canada. The resting buds resent winter exposure which can be avoided by protecting the buds with dry leaves, frost cloths or evergreen branches where snow cover is unreliable. They also resent freezing when wet which can be solved by using covers that allow for air circulation in milder wet climates. I have noticed that young plants many heave partway out of the ground during winter, but the thick anchor roots prevent total exposure. These plants can be pushed gently back into the ground in the spring.

Primula denticulata is one of the most popular primulas to grow. A search on the World Wide Web will produce a wealth of nursery catalogue entries and articles. Pictures showing the variety of color forms are listed, including pictures on the American Primrose Society Website found at www.americanprimrosesoc.org and on Primula World found at www.primulaworld.com.

MEANINGS OF PRIMULA PLANT NAMES

by Ralph Balcom

No doubt most of us have wondered just who is responsible for the naming of our plants and why so often they appear so long and complex and seemingly unpronounceable. The first person who accurately describes a species and has it printed where it is readily available to the general public, especially to various botanical institutions, has the right to name it. A Latin version sufficiently accurate to identify this plant should accompany the description and the name should be Latinized.

Most of the Primula names refer to a trait of the plant that caught the eye of the one who named it. Knowing meanings of names of the plants we grow should be of real interest to all of us. Very often it gives us a clue as to some outstanding characteristic. Here below is a list of a number of our primulas, most of them species plants, and their meanings:

acaulis - without a stem
algida - cold (algid)
amethystina - amethyst color
anisodora - scent of aniseed
aurantiaca - orange-yellow
auricula - ear shaped
capitata - clustered in a head
cuneifolia - wedge-shaped leaves
denticulata - toothed
elatior - tall
erosa - notched uneven leaves
farinosa - mealy
glabra - smooth, without hair
glomerata - bunched
glutinosā - sticky
grandis - great
helodoxa - "glory of the marsh"
hirsuta - hair
hyacinthina - scent of hyacinths
imperialis - majestic
incana grayish
incisa - edges deeply notched
involutratg - edges rolled inward
luteola - yellowish
macrophylla - large leaves

marginata - distinct leaf margins
malacoides - poorly shaped
minima - smallest
minutissima - tiny
nivalis - snowy
nutans - nodding
obliqua - unequal leaves or sides
obtusifolia - leaves blunt
officinalis - medicinal
pedemontana - foot of mountain
pinnatifida - feather like leaves
polyanthus - many flowers
prolifera - multiplies freely
pulverulenta - powdery
redolens - fragrant
reptans - creeping
reticulata - net like leaves
rosea - rose pink
rotundifolia - round leaves
rubra - red
saxatilis - growing among rocks
secundiflora - one sided
serratifolia - saw toothed
veris - spring flowering
viscosa - viscid leaves

Reprinted from the 1972 Summer Quarterly

Primula marginata

By Mary Irwin, Danbury, Connecticut

Fascination of plants and the precious architecture of each infinite species have wooed novice and expert gardeners alike since Adam & Eve first eyed each other in The Garden of Eden. For the Primula enthusiast, this fascination has uncovered treasures to share with gardeners from all walks of life. Amongst these treasures is *Primula marginata*, a plant with many possibilities. They should be a part of every gardener's repertoire!

Whether you are starting out in gardening or have become an expert grower, the marginata species is quickly becoming renowned in the Primula world. Discovered in cultivation in 1777, this species is known to grow randomly "in the wild" - found in places such as The Maritime and Cottian Alps, an area intersecting the western part of Italy and the southeast France border regions. It wanders further north into Nice, a mountainous area of France. Their abundant growth is prevalent in northern faces of rock formations, favoring limestone cliffs or crevices. Marginata is a species gravitating to lower altitude ranges, between 2,500 and 8,500 feet (500-3000m). Within the bottom range of this altitude, a northern exposure is prevalent. In the highest range of altitudes, it is more adoptable to the sun's exposure.

The marginata as it emerges from seed shoots up stems with an array of direction - from erect to sprawling with a reach of up to 2 feet (60cm) long. Hardy and woody in texture, when leaves die back, they expose a dormant bud in winter environments. The leaves grayish-green appearance mutes a leathery surface with jagged edges. There are an exciting variety of flower, leaf, and color combinations. When young plants, heavy with white transpires, a yellow-gold or white permeates the plant. Farina is a fine powdery-like substance produced by the plant on microscopic hairs. Mature leaves are known to display farina outlining the edges of the leaves. This draws the eye to the silhouette of the leaf as it creates a natural margin around its structure. Farina around the throat creates a white eye. The farina will remain prime when subjected to bottom versus overhead watering. Flower colors are soft pastels - mostly in a hue of pinks, whites, and mauve blue, or pale blues. Upon flowering, funnel-shaped, faintly scented blossoms emerge in an explosion of colors.

Primula marginata is aptly named for the jagged-edged leaves, accentuated with the yellow-gold or white farina. *Primula marginata* is found in the auricula section, being one of the easiest species of the primula family to grow. One attribute is its long-life. Via most forms of conventional gardening, the plant varies in size from 2" to 8" (5-20cm). *Primula marginata* grow well in numerous settings, including raised beds, rock surfaces, rock walls, or troughs. Whenever gardeners select pot culture in a cold greenhouse, flower stems are longer, with more rapid and sustained growth.

Flowers bloom in early spring and bring forth magnificent splashes of color to our gardens. In springtime, an abundance of water is required at setting of seed or during flowering. In many regions, April showers or the rainy season of early spring provides a natural source of water on which the plants thrive. *Primula marginata* is a deliberate, slow-growth plant. It is essential to maintain a vigil on perimeter plants to insure they do not proliferate the marginata plants, choking or depriving their rate of growth, or robbing them of much needed moisture and nutrients.

As summer progresses, each plant forms a shorter, second set of rosette of leaves known as the winter rosette. As this growth emerges, it is a sign the plant is entering the "resting" period. During the summer, watering should be limited as summer is the dry period. Well-drained soil is a key component of keeping your marginata healthy. Protect plants from drying up completely in the heat of the summer. Take steps to avoid prolonged exposure from hot afternoon sun whenever possible. Maintain adequate moisture only. The plant will also naturally hibernate moisture for the winter ahead.

With the interim fall season, any fallen leaves from trees that settle around the plant should be removed. Also, by gently pulling downward at yellow leaves that appear on the plant, they can be safely removed and discarded. As winter arrives, snow forms a protective blanket around the plant, for those fortunate enough to experience snowfall. Rapid freezing and subsequent thawing will not be as generous to the plant's health in a harsh winter setting.

Occasionally, plant's heave upward or out during the spring or winter season. Should this occur, you will need to replant them deeper into the soil. To help prevent this "heaving", surrounding the stem with a mixture of limestone rocks and well-drained soil may alleviate the problem. Older, more mature plants have a tendency to become "leggy" exposing bare stems.

Cuttings are recommended to restore vitality and vigor. A tip from Mr. Rick Lupp of Mt. Tahoma Nursery; "Remove the top of plant, just above the offsets. The plant will form more than the normal amount of offsets. The top can be used as a cutting" Cuttings are known to create a better plant. Cuttings should be taken in March-April or the fall season.

Dividing is easily accomplished as each clump retains its own roots. Cultivars are a selected form of a pure species. However, please remember cultivars are not a hybrid. As an example, *Primula marginata X* is a marginata crossed with another species of *Primula*. Cultivars or even hybrids that are named do not originate from seed. To obtain these forms of primroses, you have to propagate from cuttings or divisions. And....seedlings originating from *Primula marginata* can only be labeled as *Primula marginata*.

To present a marginata as named cultivars, the plant must have significant characteristics differentiating it from any other comparable or similar plant in

cultivation. There have been past differences in naming of several species of these plants. Therefore, the effort to eliminate any confusion or redundancy in the name process of these species is being undertaken.

A few species that *Primula marginata* can be hybridized with are *Primula latifolia*, *allioni*, *auricula*, *pedemontana*, *villosa*, and *pubescens*. There are some exemplary hybrids originating in the United Kingdom. Eyes and ears focused on the growers in this region will bring bountiful rewards by discovering new and exciting varieties as they appear.

Seed derived from *Primula marginata* can be sown successfully in January or February. Once seeds are sown, the container must be placed outside to stratify. In stratifying, you are exposing the seeds to a cycle of freezing and thawing to stimulate germination. At times, you must be patient, as a marginata seed's rate of germination can last up to two years. However, your patience will be well worth the wait! Perhaps you will enter a plant into a show someday. The rewards will be much greater when you follow a patient path.

Should you desire, why not "cross" your own plants? Plant your own seeds. Then, see what develops. You may grow an "eye-catcher" or special plant. Most of all you will no doubt enjoy the experience of growing something different and unique to the world!

Primula marginata will never let you down. It will always remain a winner in my world of plants, as I hope it will in yours. A beginner, novice, avid or expert gardener, or perhaps a companion or friend strolling in your garden will always gravitate to the unique beauty and quality this plant has to offer.

Marginata (2) Maritime and Cottian Alps, 2,500-8,500'. "... of all the rock species is the easiest, and the most fascinating, and the most beautiful. The large pointed leaves are of a hoary gray-green, and their deep-toothed edges are most delicately scalloped with white meal (thus the specific name). Mealy too are the (3") stems, and then the flowers (up to 20) are very large and of a soft, clear lavender blue (3/4 - 1" across.) The plants are inclined to form long woody rhizomes and the leaves are narrowly ovate, deeply and regularly toothed." (F) Members of this species require good drainage, are not particular as to soil, "grows on limestone or granite, sun or shade. We grow it between stones or high on a ledge. It is not so beautiful as its hybrid Linda Pope," (Mrs. Sharples, Lancashire, England).

[Reprinted from the American Primrose Society Pictorial Dictionary of the Cultivated Species of the Genus *Primula*, 1948]

Primula japonica

by Dot Plyler, Chadd's Ford, Pennsylvania

Primula japonica may be the most satisfying of the genus for those who live in places like the Delaware Valley, Pennsylvania, in zone 6B. In areas where summers tend to be oppressively hot and humid and winters may lack snowcover, this obliging candelabra primrose can flourish. Demanding only adequate moisture and several hours daily of sunshine, *P. japonica* will happily bloom and set seed year after year. Streamside, bog or similar environments are ideal, but some care should be taken not to drown the plant. Fertilizer, although not required, will make larger plants. Be cautious not to use too much nitrogen risking and encouraging huge, cabbage-like foliage at the expense of flowering.

Flowers, which appear in May or June on three foot tall plants, range from a strong red, through pink and violet shades, to white. The variety 'Millers' Crimson' has been extremely satisfying for me and has produced seedlings with the same flower shade as the parent plant. In her book *Primroses in Spring* Doretta Klaber tells us that her plants "live for several years." Mine seem to go on and on, but perhaps since they seed in so freely I am seeing new plants and thinking they are the old ones.

Propagation from seed is easy. Seeds planted in flats stored in a cold frame over winter should produce abundant seedlings the following spring. My experience has been that the candelabra group seeds germinate best if given a cold period. In Norman Deno's book *Seed Germination, Theory and Practice*, he describes success using varying temperatures (70 degrees to 40 degrees) for different time periods. He has experimented with fresh seed and some up to 2 years old. Norman also compares results from seeds stored dry and stored with cold moisture.

The British specialist John Richards in his book *Primula* gives us details on the oriental origin of this species, including some observations on crossing. He observes that *P. japonica* is "not as promiscuous as some species, being self-fertilizing, and the triploid hybrids are sterile, so no backcrossing occurs." No doubt this the reason my stand of 'Millers' Crimson' retains its clear color.

Although I checked various references, I did not find any mention of common or serious problems affecting these plants: no insect pests, no fungal problems. No pathogens serious enough to be considered troublesome seem to occur. And I have seen none on my own plants. Even the deer and rabbits that regard most green things as delicious seem to forgo the *P. japonicas*. Of course that may change next season, but so far my plants have been immune to attack.

For the gardener with the question of what to plant in the wet spot, and for the gardener who wishes to use plants requiring minimal care, *Primula japonica* offers an ideal solution.

Japonica Endemic but not common to the two northern-most islands of Japan. *P. japonica* was one of the four species; the others being *imperialis*, *prolifera*, and *poissonii*, which Sir Joseph Hooker, in 1892, termed the "Imperial Primroses." It has been proven at the Quarterly garden that *japonica* is perfectly hardy under adverse conditions. It has been grown on a hillside with little water and in heavy soil and has even nurtured baby plants to maturity without the prescribed care. The plants are not as large or as lush as plants grown by the waterside, but they are very beautiful in droves down the hillside. They grow in the borders with average border care, in fact they seem to grow and thrive anywhere the seed is scattered. Of course this part of Oregon is known for the humidity. Except for the inside of the calyx lobes, which are thickly coated with white or cream colored meal, the plant is free of farina. The 12" leaves are typical, 5" broad through the middle. The margin is sharply irregularly dentate: lighter green and thinner in texture than those of other candelabra. The scape is stout, erect, to 30" tall, bearing as many as 6 superposed whorls, the topmost umbel crowded. The original plant, before garden culture brought changes, bore purplish-red flowers. It is said that this species planted in a mass is a weed killer and this can easily be imagined as the huge tropical like leaves cover an area as densely as some of the soil hugging dandelion. We cannot get such a stand here as it is much too attractive to visitors. It is a fine gift for the neophyte as it is so easy to grow. *Japonica* is a deciduous perennial Candelabra and one of the first to appear in the spring. Its color is very recessive and tends to streak the coronas of the lighter japonica hybrids in the vicinity.

[Reprinted from the American Primrose Society Pictorial Dictionary of the Cultivated Species of the Genus Primula, 1948]

Sieboldii A beloved and immemorial ally from Japan, with its running masses of soft crumple oval leaves, scalloped and stalked; and its tall bare stems (2 1/4-12") opening wide heads of (2-15) beautiful flowers in almost every color and conceivable design of fringing segment. ... may be easily recognized from *cortusoides*, with which it has been confused, by the widely spreading lobes of the calyx. This is one of the most beloved and beautiful as well as one of the most hardy Primulas. Plants should have shelter from strong sun and rich, well drained soil, and be well marked as the rather hairy foliage appears early but by midsummer dies down and disappears. Easily propagated by seed or root cuttings.

[Reprinted from the American Primrose Society Pictorial Dictionary of the Cultivated Species of the Genus Primula, 1948]

Primula sieboldii

by Elaine Malloy, South Salem, New York

Primula sieboldii (Japanese Sakurasoh) extends the spring show of primroses. Beautiful is its mass of color from mid-May to mid June before the rest of the garden awakens. Imagine the beauty of 'Italian Lace' or 'White Lace' in an exquisite stand of stunning, extremely lacy and pure white flowers. Sakurasoh means cherry blossom (sakura) and herb (soh). The blossoms of *P. sieboldii* replace the falling cherry blossoms faithfully extending each spring.

Primula sieboldii is a hardy and easy woodland plant with whorles of flowers displayed on slender stalks. *Sieboldii* go dormant in the heat of summer. Rather than establishing a "primrose bed" to keep track of them, they show off better when individually placed throughout the garden. Via its rhizome (root system) each plant will produce a larger and larger clump. They are spectacular in their early spring beauty.

Hostas, heuchera, epimediums and hellebores are among the great *P. sieboldii* garden neighbors. They offer a permanent setting and their leaves also cover the sleeping beauties for the rest of each growing season. Hundreds of named clones are available. 'Yubisugata', 'Kuisakgirl', 'Hana Taishoh' among Japanese names; 'Cotton Candy', 'Sweetie' and 'Blue Sky in the Morning' are among the English named counterparts. Planting named varieties is one means of propagation and is easy as discussed above.

Growing *P. sieboldii* from seed is exciting and rewarding. The Heronswood Nursery Catalogue states: "...seedlings we have grown from a collection of named Sakurasoh in cultivation in this country (USA) have turned out to be sensational. For several weeks, I tried pulling those that I thought were the best out of the flats, to integrate into the garden, and finally gave up. I don't have that much room!"

Sources for seeds include the American Primrose Society, North American Rock Garden Society, Barnhaven, American Sakurasoh Association, Scottish Rock Garden Club and the Alpine Garden Society seed lists. Angela Bradford writes that Barnhaven offers Winter Dreams, Pago Pago, Manakoora and Dancing Ladies, not named individuals, but strains that contain a number of forms. Winter Dreams offers pure white and Pago Pago is pink, both strains with smooth edges; fringe edged Manakoora are "blue", mostly shades of lilac, but getting bluer. They also contain some bi-colors; white with lilac reverse. Dancing Ladies are pink bi-colors, streaked and splashed, both smooth and fringed. (1)

Sakurasoh even give reason for all out celebration! Paul Held, of the American Sakurasoh Society, experienced the spring festival in the city of Urawa, Japan. He writes: "The symbol of the city, sieboldii, are everywhere; on sides of buses, tiled walls and murals, clocks, kimonos on dancing ladies, and even man-hole covers.

There was a rock group with blossoms on the scenery...huge gates...designed to control the flooding river were painted with beautiful abstract scenes of *P. sieboldii*."(2) Revered in Japan for centuries, Japan's only National Sakurasoh Preserve is Tajimagahara Field, open only for this one day festival.

P. sieboldii is truly a hardy plant, though not an alpine. Les Brake, of Willow, Alaska, wrote Paul that his *Sieboldii* survived when the earth froze ten feet deep after forty nights below zero and before any snow cover. Its wide north-Asian distribution, from eastern Siberia (Nertschink) just north of the Mongolian-Manchuria frontier, south-eastward through northern Manchuria, the northern extremity of Korea, Amurland, north of Vladivostok to Japan (southern Hokkaido, Honshu and Kyushu) attributes to the hardiness of *P. sieboldii*.(3)

Primula sieboldii was named in the West for European plantsman Philip von Siebold (1796-1866).(4) "*Primula sieboldii* was first introduced from Japanese gardens by von Siebold to his garden at Leiden, and from there to Messrs Veitch, London, in 1892."(4)

1. Bradford@wanadoo.fr (Bradford) to primulas@yahoogroups.com

2. Held, Paul, American Sakurasoh Association Journal, Vol. II, Issue II.

3 & 4. Richards, John Primula, Timber Press, Portland, Oregon, 1993; p.129.

A NATURAL TREASURE

The Tajimagahara Wild Primrose Field in Urawa City, Japan

The Tajimagahara wild primrose (*P. sieboldii*) field, about 4 hectares in area, is located in the southwestern suburbs of Urawa City, about 25 km to the north-west of Tokyo Metropolis, on the shores of the Arakawa River. The Central Government designated the field as a Natural Monument in 1920, and upgraded its status to a Special Natural Monument in 1952. Now, the Urawa Municipal Board of Education protects it, and Urawa City made a park around the designated area. Some 700,000 wild primroses grow here, and every spring about a third of them blossom out. Including the primroses, more than 200 species of flowers also grow here. Most of them are native plants of Japan or East Asia. A great number of people visit the park in flowering time. In April, the Primrose Festival is held at the park. At that time, the field is covered with the primrose's pink and the euphorbia's yellow on a bright green background. In summer days, the field is covered with tall weeds, like reeds and vines. These weeds are good for retaining the moisture and coolness of the ground. In winter, dry weeds are useful for keeping warmth in. The weeds are cut and burned in late winter, exposing the ground. In early spring come the flowers through the fresh ground.

We recommend you visit the Tajimagahara Wild Primrose Field when the flowers are in bloom in the middle of April. It would be our pleasure to show you around.

Gisgu Aoki, Section Chief, Cultural and Natural Heritage Preservation Section, Urawa Municipal Board of Education 4-4 Tokiwa-6, Urawa-shi Saitama-ken 336 Japan

Garden Auricula

by April E. Boettger, Vader, Washington

The first written history of hybrids from the Auricula section of the genus *primula* seems to start in the mid-1500s. Much of the beginning history has been accredited to the Flemish wool weavers from about 1570. A bit later another group of folks took up the hybridization of the auricula. They were called the "Florist". This term was coined around the year 1623 to describe those who grew, bred, and exhibited their plants strictly for the decorative flowers. Carnations, tulips, and anemones are a few of the first plants brought into fashion by the Florists; with the auricula becoming well known in these societies by the late seventeenth century.

The twenty-one plus species of this *primula* section, named *Auriculastrum*, come from the mountains of central and southern Europe. These species consist of an assortment of leathery types of foliage. The flowers are mainly shades of pink; with a few yellow, white, or lavender colored petals. The species are typically quite small to minute and are well suited to rock gardens and troughs. Most are fragrant. They all seem to readily interbreed which helps to account for the many amazing types of hybrids.

Words almost fail to describe the utterly unimaginable (for the novice) diversity of the hybrids that have been produced, over considerable time, from these few simple species. From the more natural groups of hybrids like the *marginata*'s and the *allionii*'s, (both of which come from the section *Auriculastrum* also) to the almost bizarre edged exhibition or "show" auricula, to the breath taking shaded exhibition alpine auricula, to the double and the garden auricula, these hybrids produce a beauty that will never end.

The garden auricula is certainly the place for the novice *primula* grower to start. They will entice any gardener back again and again. It is astonishing that from so few flower colors within the species, the hybrids of the auricula produce all the colors of the rainbow, and many more. These hybrid beauties may be solid, shaded, striped, or with picotee edging. The beautiful and diverse foliage always elicit many comments, for it is certainly unusual for a *primula*. The succulent looking leaves may or may not be covered in farina, a white powdery looking substance. The leaves may have smooth edges, or have slightly jagged edging, looking like someone took a pair of pinking shears to them. To all this enchantment, add a fragrance so sweet it rivals lily-of-the-valley, along with the ability to re-bloom several times a year. Indeed, without a doubt, another addiction will be added to your life!

Auricula often have an undeserved reputation for being difficult to grow. This is not so, if their particular requirements are met. Some of these are a bit different than the typical *primrose*. Like all *primula* the auricula like a good rich well fed

soil. So add some of the following: compost, manure, worm castings, or rotted leaves to the soil. Since most of the species come from limestone mountain areas, a bit of lime would be appreciated too. For the most part auricula do not like deep shade or hot sun. They generally flower best with as much sun as possible, shading them from some/most of the afternoon sun, especially in hot summer areas.

Of all the requirements for the auricula drainage is the most important! They simply do not thrive well in heavy or wet soil. If drainage materials are needed, add them beforehand. Very sharp builders sand or ¼" minus gravel can be used. If possible order it screened or washed. Grit or pumice (also screen or washed) works very well, but is usually too expensive for garden use. Add these materials 1" at a time tilling well as you go. If you just dump a load of gravel you will likely have a nice place to park. It may take a bit of time to get your beds ready, but besides the auricula, most plants will do better for the effort.

A good plan is to incorporate your compost and drainage materials at the same time. Needless to say auricula do well in raised beds and sandy soils, but do add some humus materials, and pay more attention to watering in the heat of summer. As with most plants the watering needs of your auricula will vary according to your soil, climate, and/or the seasons. During the main growing season regular watering is needed, but don't over water, letting them dry out a little in between watering. For the most part in the garden, water thoroughly twice a week.

Auricula stems have a tendency to elongate. This is a quirk that makes them look a bit like cartoon ladies standing on a chair holding up their skirts and yelling about a mouse. They can begin to look very leggy over time. When this gets too unsightly mound up extra soil around them, or better yet transplant them. Just dig them up and divide into pieces and plant the leggy stems deeper. Just remember, do not bury any of the leaf, it makes the plant rot and rot rather rapidly. When in doubt add soil until the stem is mostly buried, water well and add more soil or a bit of rock if needed. Some think a mulch of small rock or grit will benefit your auricula too. Do not be afraid to attempt this. The garden auricula generally offset (make more) very well, so transplanting provides you with many more plants to spread around.

There are many thoughts of the best time to do this. At least for the first time or two, March or early April may be best, since most plants just naturally want to grow then. However, later September or early October is another option. Avoid transplanting during a hot spell, and that includes the fall. After your clump is out of the ground shake off the old soil. If too much soil sticks gently hose it off. It will be easy to see where to pull your pieces apart. Some of the offsets will not be rooted; it is best to leave them attached to the plant.

Garden auricula grow very well in pots or tubs. However, another idiosyncrasy with auricula is that, in pots in particular, they seem to need their roots hugged or they languish. So if you want to pot up individual plants the roots should just touch

the sides of the pots. In larger pots, troughs or tubs add companion plants and/or pieces of rock to the planting.

Unlike your typical primroses, slugs rarely bother the auricula, although they will occasionally crawl up and eat the pollen from the flowers. The only real pests seem to be weevil and root aphid and Orthene is effective for both. For the weevil early May is usually the best time to kill the adults, before they start laying eggs. There is some debate if anything will kill the maggots. February and August are the most important times to drench for root aphid. Yellow sticky cards are helpful in August & September when adult aphids have wings and are flying. Check the APS Web site or with your agriculture agent for further information.

Try the garden auricula, for in these you have a group of primula exquisite enough to satisfy the most exacting collector; yet easy enough for the novice. Just remember: humus rich soil, good drainage, part sun, and reasonable watering. As your auricula multiply use them for cut flowers, this brings their lovely scent up close. The flowers are long-lived and perfect in a small bouquet. All in all the garden auricula will add much beauty and fragrance to your life.

Your garden auricula may be purchased as plants or grown by seed. They will usually take 2 years from seed to bloom. Herb Dickson's garden auricula is a superior seed strain, which produces exquisite treasures.

Auricula This plant and its hybrids were in cultivation in Vienna before 1570. Grows naturally in the crevices of calcareous rocks up to 7,000 feet, and is found on the Alpine Chain, in the Black Forrest, the Apennines, and Carpathians. In this Linnean species lies the origin of the Garden Auricula. "Of all the alpiners most precious and universal and easy and hardy is *P. auricula* with its huge mealy leaves, lying out upon the gray rock like fat hoary star-fishes; and its stalwart heads of blossom, mealy-mouthed, of the imperial Chinese yellow," (Reginald Farrer). "...still one of the best for cultivation either in the rock garden or in the Alpine house; the almost invariably sweet-scented flowers on their short, stiff stalks, the silvery foliage, and the rapidity with which this species forms flourishing colonies in pockets or crevices, I cannot fail to recommend it." (Kenneth Corsar, *Primulas in the Garden*) Leaves 2-5" long, 1-2 1/4" wide. Scape 1 1/4-8" in height bearing an umbel of several yellow flowers which have a band of white farina around the mouth of the tube.

[Reprinted from the American Primrose Society Pictorial Dictionary of the Cultivated Species of the Genus Primula, 1948]

Editors Note: Remember hybrids do not come true from seed. If in your reading and inquiry you come across a named auricula you wish to grow, consider obtaining the plant from either Rick Lupp or April Boettger, both of whom have years of experience growing auricula and offer a wide selection of "named" auricula. Both businesses have been long supporters and volunteers to the APS. Their business info can be found in the back of this publication. Species seed and hybrid seed is offered through the seed exchange

Primula elatior, the Oxlip

by Fred Knapp, Locust Valley, New York

P. elatior habitat includes wet meadows, open woodland, alpine grassland and late snow melt areas, river and stream green belts, and north facing mountain slopes. It can be found commonly from sea level to about 2800 m, and up to a peak of 4000 m. Although often found over calcareous sub-strata, no reference claims a need for lime in the soil. Several do mention that its environment in some of these underlying limestone, or "chalky" clay areas may be oak or beech woods, which usually grow in and reinforce an acidic topsoil or duff. Its distribution is wide, across southern and central Europe from the edges of Spain into the Altai. There are small population clusters only in Great Britain, Spain, the main thrust of Italy, and Sweden, while Norway, Iceland, Ireland, Greece, and the Mediterranean Islands do without. An excellent distribution map can be found in the AGS guide *Primulas of Europe and America*, by Smith, Burrow and Lowe.

One of our great gardening friends and mentors was a Swiss lady, Marilyn Held, who exchanged plants and techniques with us, including our first primulas. Her garden, heavily relying on minor bulbs and primulas, would submit to planting/transplanting by hand. So many leavenings of organic material, and so regular a regimen of digging, dividing, recombining, etc. had made her arthritic hands as apt a tool as a trowel for working her favorite plants into her soil. Marilyn had a hardy storybook primula, a yellow polyanthus form which thrived mightily for her and bid fair to do well for us with her watchful advice. She had recaptured it, growing happily on its own, from a vacant edge of woods just beyond the backyard fence of her rented house near Washington, and later brought it here to Long Island. I, as she, loved it for its character and its cheerful success, but I wanted to know what it was. I did not then have many primula books, but I read what I could find. Reluctantly, dubiously, I concluded it was closest to *P. elatior*. Yet I was pretty sure it could not be. At that time Kris Fenderson was active in APS meetings in the Northeast, and eventually I asked his opinion (although I had not a plant with me). Verbal communications and memory being what they are, I am not certain how much information he gave me, especially on a "could be" basis with no specimen to examine. But I came away with a "perhaps" for *P. variabilis* (a very unconvincing kind of a name) and a definition of the said plant as a primary cross of *P. veris* and *P. vulgaris*, or a descendant of same. I had been given the "False Oxlip," and did not even know it when told. Somehow, I missed the nexus of "False Oxlip" and its technical synonyms *P. x variabilis* and *P. x tommasinii* so omnipresent in my current quickie literature review. By the way, Richards prefers *P. x tommasinii*, while Fenderson and Smith/Burrow/Lowe are for *P. x variabilis*, as the primary hybrid name. I have no choice but to go for *P. x variabilis* - it begins with a "v."

If we follow Richards, which surely seems the wiser course, Section Primula now

includes *P. juliae*, *megaseifolia* and *renifolia*. Although I have never grown the latter two, I couldn't be happier to have *P. juliae* included. From a dirt gardener's point of view, in the Atlantic seaboard climate as it enfolds USDA hardiness Zones 6-7, the primula world is dominated by the three former Vernales plants, *P. juliae* and their interlocking derivative hybrids. Surely they do belong together.

How does one grow *P. elatior*, and what success have I had on Long Island? Quite a few *P. elatiors* - unverified, but often from quite reliable sources such as Montrose - have resided here for a time, but a time usually not too long, so that I cannot claim to be truly successful with it. I have to agree with Richards' comment "...splendid rock garden plants, although they are less suitable than cowslips or primroses for naturalizing, being less vigorous in most garden conditions." This comment is not as drastic as it sounds. It should be taken in context with one mentioned elsewhere in the references, concerning the frequent absence of *P. elatior* from apparently suitable habitat. The plant, rather than needing a different regimen from that of its relatives probably needs closer attention to the regimen. Looking over the habitat summary, perhaps a higher pH or more spring moisture are good places to start experimenting if you do no better than I. Our garden, situated in mature second-growth woodland, has sandy acid soil in most areas, some with pH down to 4.5. Our primula beds are prepared with peat, dried cow-manure, composted chopped leaves, and super-absorbent, all in various unscientific amounts. We top dress with dried cow manure and composted leaves or partially composted chopped tree branches and prunings when available in quantity, and irregularly use liquid fertilizer or sometimes slow release granules more common in potted plants. We use pine needles for a winter mulch. And we do dig and divide plants or entire beds, although not on a dependable schedule. We do not regularly use lime or seek a controlled pH. In areas where this has all taken place nicely, results are gratifying. However, the quality of care is variable, depending on what else is being developed in the garden. In addition, many primulae - generally including *P. elatior* over the years, since there has never been a *P. elatior* bed - are planted at the edge of a bed "belonging" to some other primulae, where the merits of the bed may first begin to flag, or simply in a convenient area as companions to other plants. It seems that *P. elatior* has never been given our garden's "best shot," and in return *P. elatior* has not given back its own "best shot" to us.

For the record, let us run through a description rearranged from the references. The description applies loosely to all sub-species, but is best for *P. ssp. elatior*, the type plant. The entire plant is hairy wherever green, with 1/4 - 3/4 mm hairs, rarely to 1 mm. Richards notes that these tiny hairs are "crisped," presumably meaning slightly curled or hooked. Leaves 5-20 cm by 2-7 cm, with rounded tips and usually abrupt contraction at the base, finely toothed. Stem 10-30 cm, stiff and upright. Umbel one sided (secund) and many flowered. Calyx to 1.5 cm, with 5 prominent

ridges, cut 1/3 to 1/2 with pointed sepal lobes. Corolla pale to bright yellow, "sulphur" but not golden, with tube longer than calyx, flat to funnel shaped, up to 2-5 cm diameter. Capsule longer than calyx (exserted). Exceptions to this description may be minor, as number of flowers or leaf shape variations, overall size, etc. They may also be major, as the blue to purple coloration of *P. e.ssp. meyeri* (syn *P. amoena*), or the virtually hairless leaves of *P. elatior ssp. pallasii*.

I was able to assemble 10 primula books to help me with this article - I had not realized there were so many in the house. I consulted them all in order to get the most useful description of *P. elatior*, and I was struck by an unexpected element contained in several of them. The ambiguity mentioned above appears strongly in the descriptions as a defense against confusion with *P. veris*, or with the *P. veris* x *P. vulgaris* hybrid, *P. x variabilis*.

How does one dispel the strong resemblance of some forms of *P. veris* and *P. elatior* to each other? The APS Pictorial Dictionary gives "three useful criteria": 1) "The calyx lobes of the Oxlip are triangular, finely haired, and pointed; those of the Cowslip less hairy and blunt." Other references point out that the Oxlip calyx is cut 1/3 to 1/2, that of the Cowslip only 1/4 to 1/3. 2) "The capsule exceeds the calyx in length in the Oxlip; it is inferior to the calyx in the Cowslip." 3) "The throat of the Oxlip is smooth; that of the Cowslip contains distinct folds."

Other references cite the degree of one sidedness and of modest head hanging, the lack of odor in *P. elatior*, and the baggy or inflated calyx of *P. veris*. These characteristics are among the more variable of one or both species, and thus less certain indicators, but Richards specifically characterizes the hairs of Oxlip as "crisped," a telling point if you have your hand lens in your pocket.

I believe that anyone reasonably successful in growing Section Primula plants, species or hybrids or both, can learn to succeed with *P. elatior* by following one simple rule: consider *P. elatior* your most important plant. This done, you will end by following all the other rules more promptly, more fully and with more responsive awareness of the plant's progress. Many gardeners have learned to sense a plant's needs in the limited greenhouse environment; it comes from daily contact, visual and tactile, but it is more sensing than seeing. This innate insight into certain plants is transferable to your "most important" garden plants. Start with *P. elatior*.

One or two more steps you should consider concern the plants you choose for your *P. elatior* display. Grow them from seed, especially seed of mixed origin. Grow them also from divisions of any successful forms your friends and contacts in similar areas may have. Plant as many as you can each season. After you and *P. elatior* have agreed on what forms are best for your garden, seek out varieties and subspecies which seem to fit those plants. You will then be well rewarded by learning to grow *Primula elatior* in your conditions without any feeling of special care.



Primula Veris, the Cowslip

by Grace Dowling, Seattle, Washington

The popular name of the cowslip is *P. veris*, or it is often listed as *P. veris* var. *officinalis*, but whatever its botanical name, the name cowslip has been known almost as long as history has recorded itself. The name may have come from an ancient Anglo-Saxon name; it has been found in old documents as early as 1440. Shakespeare spoke of it as early as 1592 and since then it has been featured all through the life and writings of British people. In olden times cowslips were used extensively in the practice of medicine and were important in many early legends. The cowslip is more commonly found than the oxlip (*P. elatior*). It ranges from Northern Africa to Siberia and from Eastern Asia to Western Europe.

Cowslips and oxlips are so nearly allied that in practically every planting there will be specimens impossible to place definitely in either group. The cowslip, in most cases, has a one-sided umbel with nodding or drooping flowers, it is generally fragrant and the individual flowers are cupped, not flat, disk shaped flowers. They are bright yellow with a tiny brilliant red or orange spot at the base of each petal. While both cowslips and oxlips have a papery calyx, the cowslip calyx often is much more pubescent, with fine, almost microscopic hairs covering it. The cowslip has not as great a tendency to change color as the oxlip, but in a planting of various colored oxlips, many may be found that closely resemble cowslips.

The leaves of both oxlips and cowslips do not differ considerably from those of *P. acaulis*. A softer, gray-green color, a smoother or narrower leaf may tell the experienced gardener which is which. Both the cowslips and oxlips frequently develop abnormal forms, many of which have been vegetatively increased. These varieties have always been highly prized by primula growers. Many have disappeared gradually and those that have survived are generally collector's pieces. There is one, however, that is fairly common as its habits have been sufficiently fixed to reproduce seeds, a good proportion of which come true to form. This is the quaint hose-in-hose variety. The name hose-in-hose originally came from the resemblance of the calyx to the stockings worn by men in the Elizabethan age. The form is unusual, one flower growing from the center of another, making a chain of flowers. In fact, some new costume jewelry must have been copied from the style set by hose-in-hose. These grow easily from seeds and many colors are produced.

There is another form called Galligaskins, also associated with the hose worn in the sixteenth century. In these the ribs of the inflated calyx are more projecting and instead of the usual corolla there is a flower-like arrangement of green leaves, curled and wrinkled, from which a colored bloom emerges.

Jack-in-the-green, Jack-in-the-box, or Pantaloons are names given to still another abnormal form. In this the flower comes from a calyx bulging at the top instead of

the middle, forming a funnel. Both flower and calyx are the same color and the ribs of the calyx each have a line of green. Green primroses have no calyx, and the corollas, with the ordinary shape of a primrose corolla, is green. Occasionally a sport of Jack-in-the-green may not have the colored corolla coming from the green ruff, and this too is called a "green primrose."

Cowslips and oxlips should always be included in the list of flowers for children's gardens, not only because of their modest, unpretending aspect but because of the legends connected with them. Cowslips have always been cups where 8" fairies lived - "Fairy Cups." They have been called "St. Peter's Keys" because of their resemblance to a bunch of keys. Their willingness to grow in all places with little care is another reason why they are valuable to beginners.

Veris "The Cowslip." is the most widespread of the *Primula* species, even exceeding the range of *farinosa*. It can be found in damp meadows and pastures throughout Europe, except in the extreme north. This well-known plant produces a tuft or rosette of oval or oval-oblong, blunt leaves which enlarge at fruiting time, are usually contracted into a short, winged stalk; margins toothed or scalloped; both surfaces more or less covered with minute, whitish hairs. Flower stem covered with minute down. The plant is 3-8" tall, bearing a many-flowered umbel of many fragrant, deep yellow blossoms on a 1/4 - 3/4 pedicel. Corolla concave, about 1/2 inch across, lobes rounded, notched; tube longer than the 5 angled calyx which is 1/2" long. It differs from *elatior*, "The Oxlip," in that it has more compact clusters of smaller, gold-yellow flowers, has five orange dots in the stomata, and it's fragrant while *elatior* is not.

veris subsp. *canescens* from eastern and central Europe has leaves distinctly stalked, hairy below or nearly smooth; flowers 1/2 - 3/4" across. The calyx tube is scarcely exerted from the calyx. The corolla is 1/2 - 3/4" across and is flatter than the type. More robust than *veris*.

veris subsp. *columnae* is found from the Pyrenees to S. E. Switzerland and into the Balkans, Greece and Pontus in Asia Minor. The heavily textured foliage is oval or rarely oblong or ovate-cordate, abruptly contracted into a wingless stalk, the under surface being densely covered with white hairs. The corolla is flatter than *veris* and more widened at the apex.

veris subsp. *columnae* var. *valesiana* is a smaller plant, the leaves have short stalks and are less hairy with the upper surface very dark green, the calyx is smaller and is often extended. Switzerland.

veris subsp. *macrocalyx* has foliage covered with fine, greenish or grayish down; leaf blade narrowed to a long and winged petiole.

[Reprinted from the American Primrose Society Pictorial Dictionary of the Cultivated Species of the Genus *Primula*, 1948]

Primula florindae

By Beth Tait, Milwaukie, Oregon

One thinks of spring as primrose time, but the ground has to be prepared ahead of time if one is to have primroses blooming in the spring. We all have Polyanthus, Auriculas and Candelabra, so why not try some of the other Primulas, such as *Primula florindae* with its belled blooms that are so very fragrant that it makes you look around to see what's blooming. *P. florindae* comes from Tibet. In the western U.S.A. it blooms in June and July, even into October. I still had a few plants in bloom on October 20th.

The older the plants the larger the clumps become, some to several feet wide and three feet tall. Can you imagine a Primula plant like that? The root system is highly fibrous and so very compact, so much so when removing a large clump you have a big hole in the ground. The small thick roots are a red rusty color, some look like thick thread. This plant likes a boggy spot or around pools and creek beds.

I had neither, so I opened an old tile as our place is an old homestead. They used hollow logs as drain tile, laying them end to end. This extra water running over the root system of the plants made for much larger plants. As water only bubbled up from the tile when it rained, the ground stayed soggy. If you stuck your finger in the ground and pulled it out, the hole would fill with water. That was the condition they grew in, and seemed to enjoy it.

This old tile made an ideal spot for *P. florindae* and *P. sieboldii*. Such foliage and blooms you can't imagine. A lathhouse is over the top for filtered shelter so plants may bloom beyond their blooming time. Must be over a hundred *P. florindae* and a thousand or so *P. sieboldii* in all the colors, as I got some of Barnhaven's lovely *P. Sieboldii* before they went out of business. Some snow flakes and rounded blooms in pink, blue, white and maroon, some were even ruffled.

P. florindae is easily raised from seed. The foliage comes up on a stem and has a round winged leaf with some maroon color in the leaf. If in right conditions the leaf and stalk will grow a foot or so in height, the scapes are larger than your finger, smooth stalks with sometimes farina powder on the top half of the stalk, running up into the umbel and the single stems that hold the single flowers, covering every bloom. If you touch the farina it will stick to your finger. When gathering the seed, the farina sticks to everything and gets up your nose. The flower umbels will sometimes carry as many as 80 to 100 flowers, each bloom on a single stem from main bract, which is one to three inches and coated with creamy yellow or white meal. The blooms are funnel shaped, each bloom hangs dangling down on 4 to 5 inch, or even longer, stems. Some plants have dozens of stalks of bloom, depending on age.

P. florindae blooms come in canary yellow, rusty orange (copper might be a better

description of color), and some a red maroon on outside and a powder yellow inside the bloom. These colors are due to hybridizing, as the yellow was collected in the wild by Kingdon Ward many years ago. I have had all the colors. *P. florindae* sometimes sends up a second and a third set of blooms from the first big umbel, so they set one ball of blooms on top of each other, making a height of three feet or so. The blooms are sweetly fragrant, somewhat like hyacinth, so make a delightful plant to use around pools for a June wedding in the garden.

The older the plant the more bloom stalks you get. A three year old plant is a delight to see, with dozens of bloom stalks, so don't expect too much the first year. *P. florindae* goes underground for winter. I sometimes think I have lost the plants, as they are late in coming up. They usually come up the latter part of May, first showing little red mouse ears, which are the leaves. Once they start coming, as the weather is warmer, they grow fast. In no time you can see the bud stalks showing. As for dividing plants, I have never had the chance as people see the plants and *must* have them. Hummingbirds and butterflies seem to enjoy the blooms and tiny green and gold frogs sit on the leaves, and the fragrance makes you want to linger also.

Florindae One of the most popular and widely grown of the Tibetan discoveries of Kingdon Ward. It is a robust early species, a plant which often reaches a height of 3' in culture. The root system is highly fibrous, characteristic of bog plants. The leaves are 2-8" long, broad-ovate, rounded at apex, deeply cordate at base, dentate, glossy. Dark green petiole 3-5" long, stout, winged, often red tinged. The scape, usually smooth but sometimes bearing farina near the tip, bears an umbel; sometimes two, one above the other; made up of 40-60, and in extreme fecundity, 80 flowers. The bracts and 1-4" pedicels are heavily coated with creamy-yellow or white meal. The flowers are sulphur-yellow, copiously creamy-farinose within, pendant, 3/4" across, funnel shaped, and sweetly fragrant. The species is becoming rare on the Pacific Coast due to *Florindae's* tendency to cross with *alpicola*, *waltonii*, and other related species. However, these crosses result in such beautifully colored corollas, that the best and most sweetly scented hybrids are being perpetuated by hand pollination. This handsome primula grows along the creek at Barnhaven as if it were its native home. "Its fragrance is flowery and yet it is like nutmeg. It was quite drowned in the flood but it bloomed magnificently last June. To me it is exotic and extravagant and I am grateful that it likes our creek. The hummingbirds love it" (Florence Bellis) "Loose heads of dangling mealy-amber bells, ambrosially scented on 4- 5' stems (we have never seen any this tall) above lush foliage of brightest green." (Richard Sudell) Flowers here in June and July.

[Reprinted from the American Primrose Society Pictorial Dictionary of the Cultivated Species of the Genus Primula, 1948]

Primula kisoana

by Ed Buyarski, Juneau, Alaska

Are you looking for a shade tolerant groundcover that has woolly stems and leaves with beautiful flowers in shades of pink? How about a white flowered variety on plants that also enjoy moist, well drained sites? *Primula kisoana* Miq., Ann. Mus. Bot. Lugd.Bot.3:119 (1867) may be the plant for you.

Richards (1) describes it as a "rather robust, clumped but shortly creeping, deciduous plant". In my garden in Juneau, Alaska it is spreading steadily in full sun in organic soil that stays cool and moist all year. Of course our full sun conditions seldom reach 70F (21C) more than a few times each summer. The new leaves emerge in May covered with woolly hairs that persist until the plants die back in the fall. This fuzzy appearance invites the fingers to feel the texture and the leaves form an attractive ground cover during the summer. The leaf petioles and flower stalks are slightly pinkish, also covered with the hairs; only the flowers are naked. Our heavy rainfall does not seem to affect the hairiness of the plant and it does not suffer from the molds and mildew one might expect from its surface covering, unlike African violets. The fuzziness of the 4"-6" leaves also seems to deter slug chewing!

At the Berry Botanic Gardens near Portland, Oregon I have seen nice patches of the pink form under mature, 15' (5m) rhododendrons with an over story of 90' (30m) Douglas Fir casting quite heavy shade and very dry in the summer. There are also nice clumps of both the white and pink forms to be seen along the well-shaded paths at the Rhododendron Species Foundation gardens south of Seattle, Washington. This site would also be dry in the summer months because of the trees and shrubs in the area. Both of these locations experience temperatures in the 80's(28-32C) in the summer.

Primula kisoana is native to parts of Southern Japan at elevations of 700-1800m in "damp shaded sites in subalpine to alpine zones" Halda (2). It was first collected and sent to Western botanists in 1865 but was mentioned as "katsu-ko-so," (super crimson flower), in Japanese gardening books as early as 1733. Richards relates it most closely to *P. jesoana* which has longer stems and more lobed leaves but is less hairy overall.

Growing this plant from divisions is quite easy and they do appreciate rich, moist, well-drained soil, though are surprisingly tolerant of dryer conditions as mentioned above. Of course they will then spread more slowly which may or may not be an advantage if you are trying to grow this as a ground cover. In my own garden, the white form seems to be spreading more slowly than the pink. Since they are heterostylous, the plants may set little or no seed unless you have both a pin and a thrum flowering clone in your garden. Both Gerald Taafe (3) and Jay Lunn (4) mention some variability in getting *P. kisoana* to germinate, so patience may be

needed as with many other species. Jay Lunn also mentions his efforts to cross the pink and white forms to seek color variations; we wait to see the results!

I do mulch my *Primula* plants for the winter with spruce boughs to slow the effects of our common freeze/thaw cycles. Etha Tate mentioned covering her plants with cedar tow once the weather started to freeze in her Milwaukie, Oregon garden. She also reported that some growers would take a trowel to separate the roots underground for ease in later transplanting. Because the plant spreads by underground rhizomes and may remain connected for some time, this would force the plant to put out more of its own roots. If you plan to show *P. kisoana*, the plant will need more of these roots before being potted up, so plan ahead.

Do try to add *Primula kisoana* to your collection of perennials, both for its flowers and its attractive leaves.

- (1) Richards, A.J. (1993). *Primula*. TimberPress, Portland, Oregon.
- (2) Halda, Josef (1992). *The Genus Primula*. Tethys Books, Denver, Colorado.
- (3) Taafe, Gerald (1998). *Primroses in Ottawa. Primroses Vol 56 No 2.*
- (4) Lunn, Jay (1998). *Growing from the Exchange. Primroses Vol 56 No 3.*

Kisoana Cultivated for over two centuries in Japan for its foliage as well as for its "beautiful flowers of brilliant deep rose" which are carried in umbels of 2-6" on stems 3-8" high. *P. kisoana* is a ruffed, perennial species with the whole of its foliage and stems more or less clothed with silky down. The leaves are rounded, roughly heart-shaped, about 2 1/2" long and the same across, borne on hairy stalks; margins furnished with rounded teeth or lobes which in-turn are wavy. The corolla is about 3/4" across, divided into 5 broadly heart-shaped, notched lobes; tube cylindrical below, dilated upwards, twice as long as the calyx. This species grows easily in Portland gardens in cool shady places bedded in leaf mold with a ground work of small stones to give required drainage. The plants lose their leaves in winter, going underground leaving but the tip of the bud exposed. The flowers open before the leaves are fully developed. Once a plant is established it is easily propagated by division.

Reprinted from the American Primrose Societies:

Pictorial Dictionary of the Cultivated Species of the Genus Primula

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Further Reading

The past 60 years of *Primroses* hold thousands of smart, practical, hands-on informative articles written by gardeners for gardeners. Near complete sets of Quarterlies may be purchased from Cheri Fluck, our APS Quarterly Librarian. The following list of books should assist the interested gardener in their pursuit of additional information related to the genus *Primula* as well. The titles preceded with + indicate the publication is available, as of this issues publication date, from Thea Oakley, our APS Librarian. Both Cheri's and Thea's contact information is on the back inside cover of this publication. Additional resources can be found on our website at www.americanprimrosesoc.org "links" page. Note the Primrose Websites of Interest box on the following page. Some of the following publications are out of print and may be difficult to come by, but all are worth the effort to find.

- "*Primula*", Richards, A.J. Timber Press, Portland, Oregon (1993).
 + "*The Genus Primula*", Halda, Josef, Tethys Books, Denver, Colorado (1992).
 "*Primulas, the Complete Guide*", Robinson, Mary A. (1990)
 "*Pictorial Dictionary of the Cultivated Species of the Genus Primula*"
 Ed. by Mrs. J. W. Watson, I. S. Kohaly Press, Richmond, B.C. Canada.
 "*A Synoptic Guide to the Genus Primula*", Fenderson, (1986)
 "*Primulas of Europe & America*", Smith, G. F., B Burrow, & D.B. Lowe (1984)
 "*The Primulas of Europe*" Macwatt, John, Country Life Ltd. (1923)
 "*Primroses & Polyanthus, A Guide to the Species and Hybrids*", Ward, Peter (1997)
 "*The Polyanthus Its History and Culture*", Roy Genders, Sutton & Sons Ltd. (1962)
 "*Asiatic Primulas*", Roy Green, An Alpine Society Guide, (1976)
 "*Rock Gardening*" H. Lincoln Foster, Bonanza Books, New York.
 "*Primroses and Spring*" Doretta Klaber. M. Barrows and Co., Inc., New York.
 + "*Auriculas for Everyone*", Mary A. Robinson, (2000)
 "*Auriculas*" Gwen Baker and Peter Ward, B.T. Batsford (1995)
 "*Auriculas, Their Care and Cultivation*", Brenda Hyatt, Globe Press (1989)
 + "*Auriculas, An Illustrated Guide of Popular Varieties*" Malcolm Guest (1999)
 + "*The Himalayan Garden*", Jim Jermyn, Timber Press (2001)
 "*The Auricula*", Biffen, Rowland, Cambridge Press, (1949)
 "*Florist Auriculas and the Gold Laced Polyanthus*", Haysom, C. G. (1957)
 "*Auriculas*", Genders, Roy, Gifford Ltd. (1958)
 "*Primroses*", Genders, Roy, Gifford Ltd. (1959)
 "*50 Modern Auriculas*" Newton, Robert NAPS Society Publication (1970)
 "*How to Grow and Judge Auriculas*", NAPS Society Publication (2000)
 "*Rock Garden Plants of North America*", NARGS, Timber Press (1996)

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Primrose Websites of Interest

The following not-for-profit websites are provided as a resource for APS members who share a common interest in Primroses.

American Primrose Society

<http://www.americanprimrosesoc.org/>

National Auricula and Primrose Society (Links to all 3 Sections)

http://freespace.virgin.net/peter_gavin.ward/index.htm

PrimulaWorld

<http://www.primulaworld.com>

Primulas Auriculas Alpines & Shows

<http://www.wilkin94.fsnet.co.uk/>

2001 A.P.S. Seed Exchange Donors

The New England Chapter of the APS is grateful to the many members who generously donated seeds to the 2001-2002 Exchange. Although we purchase seeds from commercial sources to supplement our list, it is the expertise, effort, and commitment of our donors that allow our seed exchange to offer such a wide variety of quality *Primula* seeds every year. We wish to sincerely thank you.

This year, in honor of the 60th Anniversary of the American Primrose Society, the Seed Exchange is offering a special 'Collection' of seeds. Each 'Collection' will be 12 packets, our choices, mostly of plants described in this issue of *Primroses*. A 'Collection' will cost \$4, and can be ordered through the Seed Exchange until March 1, 2002. (APS Seed Exchange, P.O. Box 67, Millwood NY10546, USA)

We encourage new members, aspiring growers, and more experienced enthusiasts to grow and breed these beautiful species and, of course, to collect and donate seeds to the exchange in future. Each time we save and donate or share seeds, we further the Society goal of encouraging propagation of the wonderful genus *Primula*.

Jim Almond +	Joan Hoeffel *	Ernie O'Byrne *
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Janice Anthony	Tony James	Arlene Perkins
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Linda Bailey	Jelitto +	Polly Pitts-Garvin
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American Primrose Society Board Of Directors Election Ballot

Please cast your vote for **TWO** A.P.S. Board of Directors Positions and return you ballot to Robert Tonkin, 3155 Pioneer Ave. Juneau, AK 99801

_____ Mary Kordes is a Master Gardener who gardens with her husband on the Michigan Upper Peninsula near Lake Superior.. She has been an APS member since 1991.

_____ Phyllis Petrovich gardens in Forks, Washington. She has been a member of the APS for the last 5 years, as well as a couple of rock garden societies.

American Primrose Society Tacoma Chapter Show

April 18, 3pm-10pm, April 19&20, 10am-10pm
April 21, 10am-7pm
at the Western Washington Spring Fair, Puyallup, Washington
Contact: Candy Strickland
phone(253) 841-4192
6911-104th Street East
Puyallup, WA 98373

American Primrose Society Juneau Chapter Show

May 3, 10am-7pm; May 4, 10am-3pm
at the Southeast Alaska Garden Conference
Centennial Hall, Juneau, Alaska

Contact: Ed Buyarski
phone (907)789-2299
PO Box 33077
Juneau, AK 99803



American Primrose Society
P.O. Box 210913
Auke Bay, AK 99821



The purpose of this society is to bring the people interested in Primula together in an organization to increase the general knowledge of and the interest in the collecting, growing, breeding, showing and using in the landscape and garden the genus Primula in all its forms and to serve as a clearing house for collecting and disseminating information about Primula.

Membership in the Society includes a subscription to the quarterly publication *Primroses*, Seed Exchange privileges, Slide Library, and the opportunity to join a Round Robin. Membership renewals are due November 15th and are delinquent at the first of the year.

Membership Type: New__ Renewal__ Gift__
 (Membership runs on the calendar year. Renewals are always due 11/15)

- _____ Individual, Domestic and Canada, One Calendar Year at \$25.00
- _____ Individual, Domestic and Canada, Three Calendar Years at \$70.00
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Please make checks payable to the American Primrose Society. Receipts will not be sent unless requested (S.A.E. Please) 60th

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