Here Come Those Pests Again
by Joe Dupre
Anacortes, WA

Many primrosers have had problems with liverworts, mosses and algae in seed trays, pots and in the garden. Dr. G. F. Ryan reported in “Control of Liverwort and Moss in Nursery Containers,” Ornamentals Northwest Newsletter, September-October 1988, 12(5) - page 21. Using liners of azalea, rhododendron and kalmia he got good control using Ronstar 2G, Ornamental Herbicide 2, Acetidione-Thiram and De-moss. More than one application was needed to control established liverwort. He also controlled established liverwort with Byprex 65W and Microcop (tribasis copper sulfate).

He used Physan 20 to prevent the establishment of either. He also used Captan 50W to prevent liverwort.

In seed trays of rhododendron inoculated with liverwort spores establishment was prevented by Microcop, Physan 20 and Captan 50W. Seedling mortality was under 10%.

In the tests on liners no injury resulted from use of Demoss at 1:20 dilution. There was leaf burn at 1:10. No injury with Microcop, Captan or Physan 20.

In other issues of ONL H. K. Tayama of Ohio State University (OSU) reported good algae control in seedling trays with the use of Agribrom, a biocide. It is to be used in a misting system continuously as it has no residual effect. In an interesting aside Kayama noted a correlation between fungus gnats/shore flies and algae. In greenhouses with the high populations of these insects there was abundant algae growth. Where his team observed none of these insects there was also no algae.

C. C. Powell, also of OSU, did a computer search of pesticide labels and reported the following fungicides used for algae control ARE NOT registered for use in greenhouses: MANCOZEB (DITHANE M-45 or FORE), DODINE (CYPREX 65W), CHLOROTHALONIL (DACONIL 2787), CAPTAN, THRIADIMOXON (BAYLETON), BENDODANIL or DICLORAN (BOTRAN).

(Author’s aside: if you use a product with no greenhouse registration simply take the object to be treated outdoors. After treatment bring it back indoors.)

A local Washington State University plant pathology researcher uses the following formula to control mosses in seedling trays. His brew is made of water, Captan SOW and X-77, a nonionic surfactant. There is an inverse relationship in the amounts of the last two. When the brew is 2.5% of either ingredient there is none of the other, yet it is most effective when the combination of active ingredients is 2.5%.

There are 128 oz. in a gallon. So 2.5% of a gallon is 3.2 oz. The rule is liquids by volume and powders by weight. A diet oz/gram scale is accurate enough for this. Use the gram side of the scale by converting oz to grams: multiply oz by 28.3. Next construct a grid with ½% intervals where one of the ingredients increases and the other decreases. But the combined total of both is always 3.2 oz in the tests on liners no injury resulted from use of Demoss at 1:20 dilution. There was leaf burn at 1:10. No injury with Microcop, Captan or Physan 20.

In greenhouses with the high populations of these insects there was abundant algae growth. Where his team observed none of these insects there was also no algae.

C. C. Powell, also of OSU, did a computer search of pesticide labels and reported the following fungicides used for algae control ARE NOT registered for use in greenhouses: MANCOZEB (DITHANE M-45 or FORE), DODINE (CYPREX 65W), CHLOROTHALONIL (DACONIL 2787), CAPTAN, THRIADIMOXON (BAYLETON), BENDODANIL or DICLORAN (BOTRAN).

(Author’s aside: if you use a product with no greenhouse registration simply take the object to be treated outdoors. After treatment bring it back indoors.)

A local Washington State University plant pathology researcher uses the following formula to control mosses in seedling trays. His brew is made of water, Captan SOW and X-77, a nonionic surfactant. There is an inverse relationship in the amounts of the last two. When the brew is 2.5% of either ingredient there is none of the other, yet it is most effective when the combination of active ingredients is 2.5%.

There are 128 oz. in a gallon. So 2.5% of a gallon is 3.2 oz. The rule is liquids by volume and powders by weight. A diet oz/gram scale is accurate enough for this. Use the gram side of the scale by converting oz to grams: multiply oz by 28.3. Next construct a grid with ½% intervals where one of the ingredients increases and the other decreases. But the combined total of both is always 3.2 oz per gallon in water. A 1:1 ratio would use 1.6 ounce of each, a good ratio to start with. That would be 48 grams of captan and 48 milliliters of X-77 in a metric shot glass.

When you find the ratio that works best for you divide the amounts of active ingredients by 4 or 8 or you can make the same mix in quart or pint sprayers. Shake when using.

Fungus gnats can be difficult to control in greenhouses. H. K. Tayama (above) implicates them in the spread of algae. Past articles in our APS quarterly from growers
in the USA and England credit them with plant damage especially those in the 
Auricula Section. Abbot Laboratories has registered a biological larvicide for control of these wee beasties. It is a new formulation of Bacillus thuringiensis well known as the pesticide of choice to control caterpillars. For details call Abbot toll free at 1-800-123-9597. Ask for product literature and dealers in your area. By the way the name of Abbot's new product is Gnatrol.

I have read many testimonial or anecdotal reports this past year on the effectiveness of light horticultural oils and of isopropyl (rubbing) alcohol as pesticides and as adjuvants to other pesticides in controlling soft bodied insects such as aphids, mites and others. Both apparently work by penetrating into individual cell membranes of the insects and disrupting cell function. If enough cells are affected the insect dies.

But experiment gently with these as plant cells may also be affected. Don't exceed 2% in water with horticultural spray oils. Many plant species tolerate 100% alcohol sprays, others don't. Since both have a similar mode of operation combinations including both are probably synergistic, greatly increasing the effects of each. Don't exceed a total of 2% combination in experimental trials alone or in combination with other products.

Because the genus Primula is so diverse don't expect all species to tolerate the same pesticide formulations - home made, off the shelf or combination thereof of. What is phytotoxic to species of one section of the genus may not be to all other species. Don't experiment on a single prized plant or on all of your seed trays at once. Test one section of a flat and wait a few days before going on.

Do be sensitive to environmental considerations. There is a world of difference in what one can safely do to one plant or seed flat and the treatment of a thousand square feet of landscape. There are worse things in the world to contend with than liverworts and mosses.

Finally please write me or the editor so we all know your results in controlling pests of our beloved plants.

1990 Dues Reminder

1990 membership renewals are due November 15th. The annual rate for both domestic and foreign members is $10.00 U.S. per year; a second member in the family, $1.00 per year; and $200.00 for a life membership. Prompt payment of your dues, timely notices of changes in address and memberships for multiple years saves the Society resources and makes it possible for us to serve you better. Besides dues, contributions of any size will be gratefully accepted and acknowledged.

Membership is based upon the calendar year. The year of your membership expiration shows in the upper right-hand corner of the mailing label on the envelope in which your Quarterly is mailed.

We prefer that foreign members make payment in the form of an international money order. However, except as specified below, we will accept personal checks made payable from your domestic currency. Please make sure checks payable in an amount based upon the current exchange rate, plus five percent. At the present, we cannot accept personal checks payable in currency from China, Iceland, India, Japan, Sweden, and countries in the eastern block, Africa and South America.

Make checks payable to the American Primrose Society and mail to:

Jay G. Lunn, Treasurer
P.O. Box 93
Hillsboro, OR 97124
U.S.A.

The Wonderful (?) World of Automation

Bruce G. Gould
Vincentown, NY 08088

Photography is certainly an art form of this brave new world. While the materials used to paint a work of art today have changed little since the Middle Ages, and in some cases many of the pigments are the same as Neanderthal man used in the caves of southern Europe, photography has leaped through great developments in a surprisingly short time. We are now able to work with "hi-tech" equipment which seems to take all of our problems away. Unfortunately, this same technology would appear to take much of our artistic input away as well.

Photography grew up in a time of great technical advances in all areas of life and business, and it reflects it all. Photography's life sprang not from the tradition of parent to child, but straight from the minds of its first pioneers. There was no "before", only artistic minds stimulated by the newly formed building blocks of science. Here we have an art that is...
closely tied to advances in chemistry, physics, electronics, and now the mushrooming field of computers.

The first photographers not only created the image, mixed the chemicals, developed and printed the image, but also may have built or designed the equipment. Being a photographer in the time around our Civil War was a huge undertaking. Darkrooms were carried in horse-drawn wagons. The film, at that time a glass plate, had to be coated with the light sensitive emulsion just before it was placed in the camera. The image then had to be processed immediately after exposure. The cameras themselves were works of art, wooden with brass fittings and large hand-ground lenses. The camera that manufacturers now tell us to carry in our pocket at that time weighed close to a hundred pounds.

In less than sixty years this wagon full of supplies had been reduced to the little black box. Through the genius of many, led by George Eastman, photography had been opened to the masses. The traveler could record far away places. Families could keep track of children growing up and parents growing older. All subjects were fair game.

Given yet another sixty years the black box has evolved into a pocket-sized gadget crammed full of electronics controlled by a computer chip and, in the most recent breakthrough, recording fifty images on a two inch square magnetic disk. The next step has been the digitization of the image to send it over phone lines and insert it in a computer to be played out as part of a published work.

The sphere of the professional photographer parallels and sometimes mingles with the world of mass photography. Members of this somewhat elite group of individuals demand new and better equipment and materials while at the same time resisting change. The same pro who scorns frivolous gadgets will drool at the thought of a better designed lens that delivers the now impossible shot. The professional's demands are rooted in an intimate understanding of the science of photography and the knowledge that much of the equipment can be pushed to far greater limits. Many avocational photographers love the freedom of this same science but wish only to record the selected image on film.

The title photographer now covers many different groups of people, all interested in some phase of this art/science/electronic/computer field. This classification covers Mom and Dad at the baby's birthday, the serious amateur in the field or garden, the professional working on a text book, the cinematographer working on a video tape or the scientist feeding images into a computer from the spacecraft Voyager, plus the hundred of others in between. Is any one of these groups less a part of the whole? Is any one more important that the others? The fact is that all of us benefit in our own way by developments in any part of the field. Just recently several publications have realized that this expanding field encompasses so much more than cameras and film. The editors now include information on computer graphics using photographic images. Video tape and now still video have been part of these magazine articles since the technologies were introduced. Many of us involved with photography as a business are now using the word imaging to cover the craft of which traditional photography is but a small part.

How does this affect the interested but average person who wishes to record those pleasing images that they feel strongly about? Even this group is made up of two factions. First are the people who have been involved with photography for many years and are fairly happy with their results. The common remark I get from these people is that they would like to use more sophisticated equipment but are: 1. flabbergasted by the prices, or 2. intimidated by the technology. The second group are those who have recently become interested in photography because of the new "point and shoot" cameras that let them take a respectable photo without the need to know an f/stop from a lens cap. Many of these people will remain in their own respective groups forever, some babying that 1962 Nikon F (that they bought on their first trip to Hong Kong and "just takes wonderful pictures") and others grabbing for every new piece of technology as it is introduced. Both extremes on this scale are imagers in the broadest sense of this new field.

I have so often written about equipment that it seems hardware is all photography is about today. If you subscribe to any of the photographic magazines I'm sure you feel that way, too. Every piece of equipment is redesigned and updated each time there is a breakthrough in science. All of this makes for an exciting art form but, unless one stays on top of this knowledge, one that can get very confusing and expensive. Even many professionals have hit the "hi-tech" shock level. They more or less keep up with what's going on but stick to the areas that most directly involve them. Whether we are trying to make a living in this craft or get good results for a serious avocation we can only justify spending so much money.

The only way to deal with the flood of new material is through education. A basic understanding of the principles of photography coupled with an interest in new developments will give the purchaser of new equipment at least an even break. The physical laws which govern the image and control and transport it through a lens do not change. With this

Selective focusing draws ones attention to the center of the flower. Selective exposure underexposes the background so that it does not detract from the main subject.
were in hours. These exposures were strictly trial and error and much practice speeds were so slow that the exposures us. At the birth of photographic art, film some of the more difficult decisions for the automation to keep track and make more sophisticated we will need function it plays and if it is we who are manly possible would have been a great boon to our art if we understand what is "thinking"?

We, so far, have only been looking at still photography on conventional films, but there are motion pictures, video tape, still video, and, coming soon, digitized mediums to consider. A grounding in basic photographic principles is the best way to start to understand all of these exotic areas of photography. Because imaging equipment is science-based the same laws apply to every use of that particular piece of equipment. Lenses work much the same whether the image is being captured on film or on a computer screen.

The people who wish only to record an image without being bothered with what is happening in the process will grab at anything that guarantees them less fuss. As long as the equipment is affordable and to their liking they will buy it. These folks are benefiting from the input of photographers who have experienced many different situations and helped design the equipment that will automatically think the problem through. The rest of us should not scoff at all this gadgetry. As long as the equipment is affordable and to their liking they will buy it. These folks are benefiting from the input of photographers who have experienced many different situations and helped design the equipment that will automatically think the problem through. The rest of us should not scoff at all this gadgetry.

I must admit that I like anything that makes my job more enjoyable. I will never give up my word processor with spell check. (A choice our editor will be happy to know about.) For the same reason I am glad to have an in-camera light meter that is very sensitive and accurate. I have been very pleased with the recent offerings in lenses. The camera I use also has a shutter speed of one four hundredth of a second which is great for birds. But for the most part I like to focus the lens myself and I'll worry about what is happening in the process. That way I can pick and choose those things I want to express myself.

knowledge we can evaluate the "new and improved" version of lenses and see if they are something that will be of benefit to us. It's almost impossible to comprehend the computer chip exposure systems built into many of the higher A personal decision to have not only the foreground in focus but the background as well led to the use of a small f/stop.

Since I wanted a little movement in the seed head as well the slow shutter need to give it proper exposure works well.

A electronic flash set on manual and a white piece of cardboard as a reflector gives just the right amount of light on this mushroom. The reflector was used to get light under the cap and light the stem.

NATIONAL AURICULA AND PRIMULA SOCIETY - Southern Section
Invites all Auricula and Primula Lovers to join this Old Society
Membership includes year Book
Lawrence E. Wigley
67 Warnham Court Road, Carshalton Beeches, Surrey, England

Page 126 1989 Fall Quarterly

American Primrose Society Page 127
Every pot has character, shape, color and dimension. But character is what we notice first. A tall, slim, upright pot possesses a certain presence all its own. Its stateliness contrasts markedly with a pot that’s short and dumpy. And putting a plant in a pot is somewhat like giving it a new suit of clothes. The design of the pot can bring out or diminish the character of a plant.

Actually, it’s intriguing to look at a pot quickly and then evaluate what kind of impression it makes. Look at a huge, globular cactus in a small, square, green pot and you may find that it leaves the very clear after-image of a fat man wearing ballet shoes. Or consider a miniature African violet lost in a six-inch pot and you may be impressed with the sorry picture of a young child left all alone in an empty living room.

Recognizing the character that pots possess, many growers steadfastly remain devoted to one kind or another. There are many advocates of the terra cotta pot. Growers know that it “breathes” better than plastic pots and they like the earthy red-brown of the clay. No one would wish to take them away from their terra cotta, but, on the other hand, there’s a lot of plastic around. It’s lightweight, convenient and doesn’t stain as quickly as terra cotta. Plastic isn’t necessarily ugly, either. There are some perfectly acceptable plastic colors that don’t suggest hospital corridors, Chevrolet upholstery or floating bathtub toys.

Finally, there’s the material many of us indiscriminately call Styrofoam (even though it isn’t always Styrofoam). Years ago, the Dow Chemical Company developed and patented a beaded plastic substance that it dubbed Styrofoam and the name frequently, though inAccuracy, is used to describe plastic-foam products. Actually, the Dow product is used only for certain items. The white, foamilike plastic we’re familiar with actually is beaded polystyrene and it’s the material that’s used in plant pots.

**Alternative Pot Style**

In truth, almost any container can serve as a pot. Growers have used everything from porcelain vases to cut-in-half milk cartons. So if one lingers, somewhat, over the selection of a pot, it’s often for the sake of the viewer rather than out of respect for a plant’s well-being. Of course, there’s serious, but conflicting advice from various dedicated growers that echoes in one’s ears. A friend may swear that African violets grow better in clay pots than in plastic. Or perhaps someone you know suggests that chrysanthemums look better in an azalea pot than in a standard pot. What you hear and what you observe may have a strong influence on your selection of pots.

But it’s important to remember that the plant should come first. The size of a pot and the material it’s made of may influence the way your plant grows. For example, a pot of the proper size allows roots to spread out, but not so much that the plant puts too much energy into root growth and not enough into foliage and H’atch out! If you ask for a six-inch pot, you can’t always be sure of what the store will give you. All pots in this picture are “six-inch pots.” The standard pot is as tall as it is wide. But the height of an azalea pot is three-quarters its width, and a pan is only half as tall as it is wide.
flowers. Drainage must be adequate; if water doesn't run out quickly, fungi may flourish and cause root rot. Or the pot may release water through its sides and allow air to enter the soil: that, too, affects the growth of a plant. And even the shape of the pot may change your plant's habits.

**Shape: A Practical Matter**

In the jargon of commercial growers, there are three kinds of pots. The **standard pot** is as tall as it is wide. The height of an azalea pot (so-called because it traditionally is used to grow azaleas) is three-quarters the width of the top. And a pan is only half as high as it is wide. Of the three, a standard pot uses less shelf space than an azalea pot or pan holding the same amount of soil.

If you're potting a tall plant in a lightweight, soilless mix, you might prefer the low, wide azalea pot or a pan to keep your plant from tipping over. Also, there's personal taste to consider. **Some people think azaleas, primroses or calceolarias (slipperworts) don't look balanced in anything but azalea pots.**

Unfortunately, the three types of pots are not equally available because of the law of economics. When 99% of a plant shop's customers buy only standard pots, the shop may give up stocking azalea pots or bulb pans. So you may have to look around for the pots you want.

One last aspect of a pot's shape is the taper of its sidewalls. The sides of most pots taper about five degrees from top to bottom rather than run straight up-and-down. This taper never affects a plant's growth unless you use a sharply tapering pot that inhibits root growth.

**Clay**

A clay pot is just about the most ancient invention in the house. Everyone probably has used some kind of clay vessel at one time or another. But just because it's a familiar item, a pot isn't simple to make. In fact, most of us, if we tried to make one, probably would end up with a heap of wet clay as lumpy and nondescript as wet dough. So it's interesting to take a second look at the faithful clay pot and find out how it's constructed.

In the first place, the word "clay" is a rather vague descriptive term for a lot of different materials. What we call clay actually may refer to many natural substances that differ greatly in appearance, texture and chemical and physical properties. Clay dug up from the earth contains several basic elements, such as feldspar, potassium and sodium. But mixed with these are other, nonclay materials such as quartz and mica. Most clays near the earth's surface also contain iron oxides, which cause the clay to turn red-brown when heated to a high temperature.

A pottery factory usually is located conveniently near the site of a large clay deposit. In the United States, eight large factories and several smaller ones currently make pots from common clays usually called terracotta (Italian for "cooked earth").

While the process of making fine pottery is rather complicated, making flowerpots is fairly simple. After extracting clays from the earth, potters first remove nonclay materials such lime, which cause pots to crack as they dry. Next, clays are ground into smaller particles and mixed with water. The wet clay is pressed to the familiar pot shape and put in a large overheated room with air circulating constantly around the still-soft clay. Sometimes pots are conveyed on belts through a drying tunnel. Depending on its size, a pot may require from half a day to two or three days to dry. But if you were to wet a dried pot at this stage, the clay once again would turn soft and puttylike. To fix permanently the shape of a pot, clay is fired in a kiln at temperatures around 1800°F (980°C).

In its natural state, clay has pores through which air and water can pass. When clay is fired, many pores close on the pot's inside and outside surfaces. But 1800°F is not hot enough to close all of the pores. A finished pot still has plenty of pores distributed throughout its sidewalls.

So unless a pot is covered with a glaze to seal its surface, the porous clay serves as a kind of safety valve. It allows excess water and fertilizer to leech through the sidewalls and, at the same time, lets air in. This porosity is the biggest difference between clay and its major competitors, plastic and beaded polyurethane.

**Considering Clay**

If you're not sure about a new plant's "drinking habits," a clay pot usually is the safest container to start with. Also, it's a favorite for cacti, succulents and other plants that need dry soil for certain periods.

But a terracotta pot does suffer some disadvantages. It's more expensive than a plastic or polyurethane pot of the same size. Clay is heavy when wet and cracks easily. And because terra cotta is porous, water carries excess minerals and fertilizer salts to the pot's outside surface. There the water evaporates, leaving a hard, white crust. A clay pot that's misted constantly or sits in a pebble tray may develop algae. When you see crusts or algae forming, clean the pot with a mixture of one part bleach to ten or fifteen parts water, applied with a scrub brush or a sponge.

When you repot a plant, you should clean the insides of the clay pot as well. This reduces the risk of transmitting soilborne pests to the pot's next occupant and makes the new plant easier to remove when it outgrows the pot. Also, a run in the dishwasher usually cleans a clay pot.

For more stubborn crusts, first remove loose dirt from the pot's insides. Next, place the pot in a pail of boiling water and detergent until the water cools. Then scrub off any residue and rinse clean.

Let the cleaned clay pot dry out before reusing it. Then soak the pot in a basin of clean water, preferably for several hours, before placing another plant in it. Otherwise, the thirsty clay will take needed moisture from the soil and from the roots of the newly potted plant.

If you use a clay saucer under the pot, water eventually seeps through the saucer to mar wood or rot carpeting. So place a round piece of half-inch-thick cork under the saucer to absorb water. Or use a plastic saucer.

**The Ways of Plastic**

As a material for pots as well as saucers, plastic has certain advantages over clay. Plastic pots are lightweight, easy to stack and difficult to break. They're less expensive than clay pots. Fertilizer salts can build up on the inside walls and along the rims, but plastic pots still are easier to clean than clay.

Plastic, however, is not porous. Air and water enter through the soil's surface, as with clay pots. But nothing passes through the sidewalls of a plastic pot. This lack of porosity doesn't mean plants grow less well in plastic than in clay. It does mean that a plant growing in a plastic pot requires less watering and fertilizing than it would if grown in clay. If you overfertilize, soil in a plastic pot builds up nutrients that can burn plant roots. Excess water makes the soil soggy and causes root rot.

Incidentally, growers using clear plastic pots find that plant roots turn away from light passing through the sidewalls. This is both good and bad. Since roots don't butt against the side of the pot, you won't see the classic potbound symptoms. But on the other hand, you'll have a difficult time judging whether the roots really are cramped for space, since they're growing densely near the center rather than crowding around the surface of the rootball.

**Hot and Cold Pots**

Beaded polyurethane is the material least used for pots. Many people believe that plants simply can't grow well in anything that resembles a disposable hot-and-cold-drink cup, but we haven't
found any evidence to prove that such containers actually are detrimental. In fact, whatever you think of their appearance, these picnic pots show some definite advantages that we should mention.

While beaded polystyrene is no porous, its insulating quality prevents rapid changes in soil temperature that cause soil to dry out quickly. For instance, if you set your plants on top of a radiator cover, and they're potted in polystyrene, the soil temperature won't fluctuate crazily as the heat turns on and off.

Polystyrene pots dent easily, but they don't shatter as clay does. So they're perfect for a whole batch of starter plants that may be subjected to rough handling. Most of these pots are white and get dirty quickly, but you always can wash the dirt off.

Polystyrene pots can be reused. Between pottings, just wash out the container with the same bleach-and-water solution you use on clay pots.

Polystyrene is lighter in weight than either clay or plastic. Of course, a tall, spreading plant in a standard polystyrene pot might tip over easily, especially if potted in a lightweight, soilless mix. But polystyrene azalea pots, and bulb pans do exist. And they're perfect for putting on a precarious shelf where you don't want a dangerous amount of extra weight.

They rub here is that many plant shops don't even carry standard polystyrene pots, much less the squatter, fuller versions. So if you want to give them a try, you might have to start small. You can put some seedlings or miniatures in the familiar, nonhorticultural, hot-and-cold-drink cup, with a hole punched in the bottom for drainage. They're not beautiful, certainly, but handy all the same.

**Geometry And Good Times**

Selecting pots is a lot of fun. They come in all shapes, colors and sizes, and at prices that vary with the quality of the material. A round, standard pot can be put in a saucer with low sides or high sides. You can put terra cotta, plastic and polystyrene together, or the round with the square. Colors of plastic pots range from deep black to green, orange and white, with a host of garish hues also available, if you want them. And you'll find that the whole look and shape of a plant varies, depending on the color, size and geometry of the container it resides in.

If you give some thought to selection, you soon can recognize the individual character of each pot, even if it's crowded on a shelf with a lot of others. Sometimes the recognition is instant, but often you have to take a certain pot off the shelf, stand it by itself, turn it this way and that, and imagine it holding a particular plant.

Like a new suit of clothes, the container should fit the character of the plant, and you want to feel good about the size, color and cut of it. If your plant and pot are compatible, they can live together forever. But choose a pot with the wrong character and, like a growing boy in a too-small suit, your plant never will look comfortable.

**Pot Tips**

A pot is a plant's home. Helping it move in is a matter of style. Some people pot one way, some another, but every grower seems to have some advice that comes from experience. So we decided to put together some "Pot Tips" that may help your plants live in a satisfactory style.

**Growing Room**

Plant roots need room to grow. Ideally, they should have from one-half to three-quarters of an inch of growing room in every direction. So when you're potting a plant, look at the diameter of the root system and draw an imaginary circle around the roots. Then add an inch and a half. So, if the root diameter is two and a half inches, you need a four-inch pot.

**Sizing Up Pots**

Pots always are referred to by the top inside diameter, so a four-inch pot is just that wide across the top. If it's a standard pot, it also stands that high, but other kinds may be shallower. What's available? Standard pots range in size from one to fourteen inches. Azalea pots start out with the four-inch size (it's difficult to imagine an azalea needing a pot smaller than that) and go to five, six, eight and ten-inch sizes. Pans start at five inches.

**Free The Potbound!**

At some point, most plants become potbound, that is, they continue growing until the roots sprawl against the side of their containers. Roots even may stretch out of the drainage holes. Should that happen, transfer a plant to a pot that's one inch or one and a half inches larger than its original pot.

**Special Containers**

There are all sorts of special pots for special purposes, some with peculiar accessories, some of which are below.

Plastic pots with snap-on plastic saucers. When you pick up the pot, the saucer comes with it. It's guaranteed dripless (as long as you don't overwater).

Bulb pots have side holes. When you force a bulb, its leaves extend obrigingly through the side holes.

Peat pots are made from compressed dried peat moss or wood fiber. They're great for starting seedlings but soft and fragile when wet.

**Cachepots**

The above word is derived from the French word meaning "hiding pots." If you're showing off an antique urn, tub or vase, it's best to use it as a cachepot, since the thing doesn't have holes in the bottom and you certainly don't want to punch holes out of an antique. Just put a hard-working clay or plastic pot, along with an ample saucer, inside the heirloom.

**Cachebaskets**

Yes, you can use baskets, too, but watch out. Straw, grass or wicker can rot from constant moisture. Never use such baskets for holding soil. They serve well as cachepots, but inside the basket, place a smaller pot with a plastic saucer to collect excess water.

**Watch The Wood**

Wooden planters usually are made of cedar, cypress or black locust. Always attractive, they insulate the soil, keeping plant roots cool. But wood absorbs water and eventually decomposes unless you
treat it with a preservative. One of the better preservatives is Cuprinol, which you can purchase at most lumberyards.

Of Pots, Plates And Porcelain

You wouldn't think that a salt-encrusted terra-cotta pot shares anything in common with you prized porcelain dishes. But both are made from clay and clay products are more alike than different.

When Mesopotamians used their first pottery wheels around 5000 B.C., the results were much like the terra-cotta pots we use today. But terra-cotta was just the start. Potters have strived to make their products both more smooth and more white.

An important first step for Western potters was the discovery of an opaque white glaze that they then used on porous clay fired at about 1770°F (950°C). This pottery was called majolica.

A more selective use of clays, and firing temperatures of 1860°F (1000°C), produced earthenware, which also was porous until glazed. When "china" clay deposits were discovered in England during the 18th century, they were mixed with other clays to produce stronger, white earthenware such as Wedgwood.

Stoneware, popular in Europe from the 16th to 18th centuries, employed the most common clays. But it was fired at a high enough temperature (2250°F, or 1200°C) to make it almost nonporous.

High point of the potter's art was china or porcelain, made largely from white clay. The Chinese first discovered this type of clay and already were using it when Marco Polo visited China in the 13th century. To make a product like bone china, white china clay is mixed with Cornish stone and bone ash and fired at 2310°F (1250°C), which renders the clay completely nonporous.

A common flowerpot might look strange sitting next to an elegant porcelain vase, but without one, we couldn't have had the other.

A Synoptic Guide to the Genus Primula

by

G. K. Fenderson

This book is intended to serve as a basic reference to the genus Primula. Approximately 1375 species, synonyms, and hybrids are included, each with complete reference to author, initial publication, and current status: for nonhybrid taxa, details of typification are also given. Distribution, habitat, altitude, section, a cultural code, stature, and color are indicated for all currently accepted species. The several dozen species described since 1949 are included within this conspectus.

Chapters are devoted to the taxonomic history of the genus, its origins, and distribution. Other chapters treat cultivation of particular species or groups, growing primulas from seed, and pests and diseases.

ISBN 0-935868-24-0. v. + 213 pp. 7" x 10" hardbound with dustjacket; 56 line drawings. 1 black and white photograph. Available from International Specialized Book Services, Inc. 5602 NE Hassalo St., Portland, OR 97213 ($40.00). Available outside the USA from Wheldon & Wesley, Codicote, Hitchin Herts, SG4 8TE England.

Treasurer's Report: At present, the balance in the treasury is favorable. However, there is concern that it costs more to produce and mail the Quarterly than is received in annual dues. The question of raising membership fees will be placed on the fall agenda.

Fall Board Meeting: The meeting will be held October 14th at Herb Dickson’s home in Chehalis. A determination of the need for a January meeting will be made at that time.

International Primula Conference: At this time, there is no support for the documentation of the trip to China. The National Geographic Society does not wish to sponsor a trip devoted only to primulas.

After much discussion of the current planning for the Conference, the APS Board passed a motion authorizing Larry Bailey to appoint a committee of APS members to investigate the status of the Primula Conference and to present recommendations for proceeding at the next Board Meeting. Among the questions this committee must consider are: leadership and organization, scale and timing of the Conference, number and type of attendees.

National Shows: The Valley-Hi Chapter in Beaverton, Oregon will host the 1990 National Show. The date and time will be announced at the fall meeting.

Herb Dickson reported the possibility of the 1991 National Show being held in Philadelphia. Larry will contact Anita Kistler, President of the Doretta Klaber Chapter, for further information.

Flip Fenili is working on a set of guidelines to assist chapters hosting the National Shows. A draft will be available to all chapters for comment.

Membership: The Membership Committee continues work on a brochure explaining the Society. A motion authorizing the treasurer to have new membership application forms printed was approved. Chapters or individuals needing membership applications should contact Larry Bailey.

Seed Exchange: Peter Atkinson has sent letters of inquiry to thirty commercial seed sources. A bank account for the Seed Exchange has been opened that will accept most foreign currencies. Henceforth, the Seed Exchange will accept many foreign currencies as payment. An article urging seed donations should be placed in the winter issue of the Quarterly.
Comments: The APS will participate in the Northwest Flower and Garden Show to be held in Seattle, Washington February 16 through 19, 1990. Herb Dickson will set up the display, but will contact the Seattle Chapter for help in manning it. Herb has wooden plaques to be engraved and presented to National Trophy winners. A volunteer is needed to be responsible for this project.

The Society maintains two record sets of Quarterlies. A volunteer is needed to keep these sets up to date. Any member who can volunteer for any of these tasks, please contact Herb Dickson.

Respectfully submitted,
Ann Lunn
Secretary

A complete auricula truss

Book Reviews


Did you know that those exotic and all but irresistible auriculas are currently enjoying a huge revival? Here in the United States to be sure, but particularly in Great Britain as well. It's not yet quite “like the old days” but there are signs everywhere that increasing interest is developing in the delicacy and charm of these remarkable primulas. Auricula specialist Brenda Hyatt, heir of the legendary Douglas dynasty, has created here a most pleasing and attractive book about her charges (she now owns, shows, propagates and sells the entire Douglas collection). She talks about their history, not too exhaustively, but with great charm and insight. She discusses their care and cultivation, not in boring detail, but just enough to let you in on the knack of raising these essentially easy plants successfully. She covers propagation and hybridizing very simply and persuasively. And every bit of this essential and interesting information is accompanied by the most delightful line illustrations by David Ashby. In fact, these are so attractive that an example is included here.

There are other good things: a good list of the best named varieties of all classes of auriculas, guidelines for exhibitors, gardens to visit in both U.K. and USA, Societies to join, nurseries to buy treasures from, a glossary, bibliography and index.

And then, there are the color illustrations – 83 of them on 57 pages. Many of these are superb, and together they constitute an impressive and revealing gallery of what's what in the world of auriculas.

Any auricula lover will be pleased with this beautiful volume.

Seed Exchange

Note: Donations are urgently requested for the 1989-1990 seed exchange. In order to be included seed must be sent at the earliest possible moment to:

Peter Atkinson
APS Seed Exchange
P.O. Box 59541
Renton, WA 98058

Please include as much information about the seed as you can and please hurry!

The following pieces have been appearing during the last few months in the newsletter of the various societies and chapters – pieces about various groups or exciting individual primulas – and they are of such special interest that we thought the presentation of a number of them would be of interest to PRIMROSE readers.

Primula denticulata

"Drumstick Primula"

This is a plant for early spring! In early to mid-March, as it determined to be the first flower of the season, the bloom stalk rises out of a resting bud of young leaves. The stem grows to about a foot and buds are in full bloom long before the leaves reach their mature size. (For the adventurous, the young leaves are recommended for salads.)

It is an easy plant to grow and does well anyplace where the soil is rich and moist; damp woodland, bog, at the edge of a stream or in a partially shaded border. P. denticulata can be propagated by division, root cuttings or seed. The first two methods are essential if one wants to propagate a particular color form.

Root cuttings are taken some time during the winter. Two inch pieces of the root are placed horizontally ½" deep in light, peaty soil. Keep soil moist in a greenhouse or frame. New growth should begin in the spring and plants can be set out when they are about 2" tall.

The most common color of P. denticulata is lavender, but white (alba) and reddish purple (rubin) are available. The lavender color is quite variable, ranging from a pale shade to purple.

Ann Lunn
Primula Marginata
by Brian Skidmore
Primula of the Month – February 1989

The name refers to the farina of the leaf margins. It is endemic to the SW Alps from the Maritime to the Cottian Alps on both sides of the French/Italian border, growing between 2,000 and 8,000 ft; and occasionally at lower elevations. The plant grows on limestone and on steep humus slopes in the shade of bushes and trees. In the higher elevations it seems to be more tolerant of exposure to sun. With its long stems it gives it a shrubby appearance as it trails along and down rock faces. The serrated leaves are leathery in texture, grayish green in color and farinose. The white farina on leaf margins is particularly bright on young leaves. Marginata flowers are funnel shaped, flaring out at the end like trumpets and are lilac-lavender to bluish lavender in color, and fragrant. Sometimes violet or even pink forms are found. Primula marginata is the most widely grown and known of the whole mountain group, and of the rock species it seems to be the easiest. It does not seem particular about soil but must have good drainage, especially in winter, and have moisture during flowering time. After flowering, from early summer on, it can withstand very dry conditions. Some growers are successful in growing it between pieces of tufa. It seems to look best when planted at the back of a wall or in a crevice where the branching stems can grow out and hang over. When the rhizomes become long and straggly they can be cut off and easily treated as cuttings. Apparently, the plants come easily from seed, the germination favored by cool conditions, around 32 degrees, and with plenty of light. There are many clones available; some of the most popular ones being:

‘Clear’s Variety’ – small lilac flowers with a white eye;

‘Drakes Form’ – flowers larger, pale lilac-lavender. Attractive foliage;

‘Agee’ – large lilac-blue flowers with cream eye and heavily farinose;

‘Pritchards Variety’ – large lilac-purple flowers with white farinose eye;

‘Linda Pope’ – probably the best known marginata hybrid (P.x marginata) and is an outstanding variety. It was raised by a Mr. Pope of Birmingham, England, and named after his daughter. The pollen parent is still in doubt. It has large rounded flowers of an attractive mauve-blue held on an erect scape. The large toothed leaves are heavily powdered with whitish farina and the flowers have a white farinose eye. It won an award of merit in 1920.

It is interesting to note that marginata hybrids have not been found in the wild, even when growing close to Primula rubra or Primula viscosa.

I have been successful in growing ‘Linda Pope’ in the crevice of a retaining rock wall facing northwest, and also in clay pots in the alpine house. They are planted in a coarse mix of mostly sand and pumice, with a very small amount of peat. In summer the pots are plunged into a sand bed in the alpine house, and in the winter they are kept dry. In February I usually fertilize them with half-strength fish

and bloom. The plants, unfortunately, are prone to root aphids and often have to be treated with Cygon. Sometimes I lose the plants due to root rot, but find pieces root easily in a cutting box.

I find Primula marginata well worth growing, its foliage alone is worth the effort.

Reference

Asiatic Primula
by Linda Bailey
Primula of the Month – October 1988

Section Nivales (now Crystalphlomis)
Background.
These primulas are found in the mountains of western China and in the Himalayas. They are plants of high alpine meadows, particularly wet meadows. They also grow among the rocks by streams. But they are not bog plants! In the wild, many of these primulas are fine, robust extremely handsome plants, but they do not take kindly to cultivation. Of 40 or more species, less than a dozen have been cultivated, probably because it is very difficult to duplicate the long, uninterrupted dormancy possible in the natural habitats; and during the growing season to match the wet meadows with rapid soil drainage.

Description
Leaves are more or less strap shaped, tapering gradually toward the base. If there is a petiole, it will be short. Leaf margins are finely toothed or nearly entire. Except for the midrib, veining is inconspicuous. The plants usually over-winter as a resting bud protected by fleshy scales at the base of brown withered leaves of the preceding season, much like P. denticulata. When emerging from dormancy, the leaves are farinose, silvery or greenish white. Flowers may be purple or yellow; white is not common. Flowers are formed in umbels on a stout scape/stalk, and tend to form only one umbel with many flowers. The individual blossom is a funnel shaped cylindrical tube flaring into the five petal lobes which overlap and flare out to form the funnel.

The section is divided into four subsections: Eu-Nivales (Crystalphlomis):

1. Agleniana, based on the species P. agleniana; corolla is campanulate/bell shaped rather than funnel shaped. It is restricted to the converging frontiers of Tibet, Burma and China.

2. Calliantha, based on the species P. calliantha; generally farinose (greenish yellow). Purple flowers with petal lobes notched in little. It is conined to SW China and adjacent Tibet. It is also found in NW Burma and extreme eastern Himalayas.

3. Crystalphlomis (formerly Eu-Nivales), based on the species P. Nivales. The flowers of this section are generally purple (rarely yellow or white) and most species are farinose with silvery-white farina which disappears after flowering. This subsection is the largest and most widespread - found in 3 geographical areas: central Asia; north and east into Siberia; and Alaska. Some plants from this subsection have been successfully cultivated.

4. Maximowiczii, based on P. maximowiczii. Flowers are reddish, yellow or dark purple. Corolla lobes are narrow, linear and more or less reflexed. Restricted to N and W China and adjacent to Tibet.

Cultivation
These primulas are difficult to keep in the garden. Successful flowering
depends on the inherent resistance of the species to your climate and also on your skill to simulate their natural growing conditions. The following information is specifically for the sub-section Cystalpilomis, as this sub-section has had the highest success rate. When you can get seed it usually germinates well; but getting through the seedling stage is difficult. As a section, they do not like pots. Their thong-like roots are too vigorous. However, if you have a single small first year plant you are afraid to overwinter outdoors, it may be put in a pot to give better control against crown rot.

The resting bud in winter is protected by fleshy scales at the base of tough, persistent withered leaves. Do not remove the old leaves at this time, but be watchful for signs of crown rot if the winter is a wet one. P. chionantha emerges early from dormancy and must be protected from severe frosts. When growth just begins in spring, you may propagate a clump by carefully separating the resting buds and immediately replanting in open ground.

In the wild, these primulas grow on sites with a great deal of moisture during the growing season; coupled with rapid soil drainage. In cultivation they cannot tolerate high soil or air temperatures and will collapse or become monocarpic. A lightly shaded, naturally damp north slope is good; careless artificial watering in hot weather is bad and may cause crown rot.

**P. chionantha.**

This is the single most well known plant of this section with which growers have had some success— even me. It was first flowered at Kew in 1917 from seed collected by Forrest in 1914 in NW Yunnan, China. Since that time the species has remained in cultivation.

### Personal Experience

I had one plant about 7 years ago. It lasted in the garden 3 or 4 years, flowering twice. At that time I did not know that it was difficult plant, I only knew what I observed at a Primrose Show: a beautiful large creamy-white fragrant flowered plant covered with white farina on the underside of the leaves, and I had to have it.

I took good care of it that first year, planting it under an apple tree in an area that has an underground drainage pipe nearby; and provided an oak leaf mulch during the winter. The May bloom consisted of a strong fat stalk with 3 superimposed umbels of lots of creamy-white flowers which were sweetly scented—hinting of vanilla. The calyx at the base of the funnel was chocolate colored. It was a striking plant, about a foot tall, and after flowering made 3 crowns. I did not divide my plant. I should have when it first started growing the next spring—then I might have had a chance for seed. *P. chionantha* will set seed if there are several plants. Birdie Padavich of North Bend has a whole bed of *P. chionantha* and she says they set seed freely in her garden.

That fall, I didn't get around to weeding and putting the garden to bed. My *P. chionantha* under the apple tree was now companioning with foxglove and liverwort. During the winter the area was covered with apple leaves and mushy foxglove foliage. Next spring when I cleaned up I found a very small struggling *P. chionantha* crown. It put out a small truss early and then disappeared from my garden after a dry summer.

### Bibliography


---

**Primula Veris**

by Pat Bender

*Primula of the Month — March 1989*

“I smell a smell of honey; is it the cowslips outside, in the hedge?” So asks Mrs. Tittlemouse, referring to *Primula veris*. She might not know its botanical name, but like all the English she is imbued with love of the cowslip. To quote from *Flower Chronicles*, when an Englishman is transplanted by the needs of business or diplomacy to the far places of the earth, the Englishman who is also a gardener (and a surprisingly large percentage of them are) cultivates with interest the flora of the country to which he was sent, but he is apt to go to a good deal of trouble to raise, among those unfamiliar flowers, some from home. If he can establish a few clumps of English primroses he is happy.

*Primula veris* is one of the most widespread of primulas, ranging throughout Europe “with the exception of northern Scandinavia and northern Russia and many parts of the European Mediterranean areas. It extends eastwards through the central and Southern Urals, across central and southern Siberia to reach the upper Amur Valley northeast of Mongolia southeastwards it reaches Turkestan and northern Iran. It is absent from Turkey, except in its eastern extreme, and from the Levant and N. Africa.” (*Primulas of Europe and America*). The cowslip flourishes in drier conditions than *Primula vulgaris*.

The flower is ordinarily yellow, but can be orange or reddish. There are three sub-species: *P. veris* subsp. canescens, which has an open bell-shaped calyx; subsp. columnae, bearing a large almost flat flower; and the Asiatic *macrocalyx*, which has a long calyx and orange-coloured flowers. (*Auriculas and Primroses*).

---

The cowslip, once so prolific in English chalkland meadows, “was decapitated in vast numbers to make cowslip wine and has suffered from the use of herbicides and the plough”,”The regenerative chain is broken almost beyond redemption in many areas, the cowslip being a victim.” (*Primulas Old and New*). Indeed, this is not surprising when one considers an early recipe for cowslip pudding which calls for the flowers of a peck of cowslips.

Medically the cowslip was used to cure paralysis, depression, aches, pains, wounds, mental illness and even bashfulness. The latter condition is treated by having the sufferer anoint his face overnight with hare's blood and wash it off in the morning with strawberry or cowslip water. (*Flower Chronicles*). Cosmetic uses were many and ranged from treatment for wrinkles, spots, sunburn, and to make women fair in the eyes of the world.

Culinary uses of the cowslip including eating both the leaves and flowers as salad, using them for stuffing meats, making jams and conserves, tarts, syrups, tea, and wine.

Even toys were made of *Primula veris*: Fifty or sixty flower umbels, nipped off close to the top of the main stem, are hung across a string stretched between two chairs. The flowers are then pressed slowly and carefully together and tied tightly to form a ball—a totsie, children call it, and with this they play tis-totsy. (*Flower Chronicles*).

Researching this subject made me realize how far we have come from integrating nature into our lives. For hundreds of years the cowslip, among many other plants, was part of everyday life, not a decorative item purchased at a nursery. I envied these early people and their close association with nature:

“Where the bee sucks, there suck I:
In a cowslip’s bell I lie.”

Primula Juliae

by Sam Hamilton and Joe Dupre
Primula of the Month – April 1989

Quoting from Grace Dowling's article in the APS Quarterly, Fall 1962: "The plant of Primula juliae has a peculiar vegetative habit of reproduction. A stolen-like root runs along underground producing new plants and, in time, forming a large mat. The new crowns may be cut away from the original plant, and as these growths increase rapidly, the plant can be more than doubled in 1 year." Typical P. juliae leaves are spoon shaped, that is small leaf long stem. In the species the stem has a reddish or bronze color.

The plant was introduced into England shortly before 1900. P. juliae was discovered in the spring of 1900, but did not arrive in England until sometime later. Neither the APS Pictorial Dictionary nor Primula of Europe and America list or describe P. altaica.

Yet much controversy has been generated over the years about the probable parentage of many named Julies and the Garryard series. There are some in England who maintain the most famous Juliana of all "Wanda" is not a true P. juliae as it was named before P. juliae was introduced into England.

A letter to the editor of Primroses by Mrs. Gwyn Baker said a grower at the Baker Nursery (not related) grew "Wanda" from P. juliae seed and named it after the wife of one of the owners. She further described "Wanda" as a pin eyed plant.

Don't expect this controversy to die! At the last (March) meeting Rosetta Jones said crosses of straw or light yellow flowers on lavender flowers resulted in seed which produced a wide variety of blossom colors. If you have the Juliana "Springtime" try crossing it with "Dorothy".

Both "Jay-Jay" and "Gracie" are genetically unstable, carry the genes for doubling and were available at show plant sales this year. Try crossing them together or with other Juliana.

An interesting article on Primula juliae, "Seasonal Notes from Barnhaven" by Florence Levy (Bellis), can be found in the fall 1957 issue of Primroses.

Section Proliferae

by Joe Dupre
Anacortes, WA
Primula of the Month – September 1988

In this presentation on the primula Section Proliferae (formerly Candelabra) I shall be quoting or paraphrasing Smith and Fletcher's monograph on Candelabra read October 23, 1941; from Kris Fenderson's article in the Winter 1963 (Vol. 42 No. 1) of Primroses; from Grace Dowling's continuing articles in the Winter 1963 (Vol. 21 No. 1) issue of the APS Quarterly and from Asiatic Primulas by Roy Green.

Unless you are a dyed in the wool purist just about all of your questions can be satisfied by Fenderson's article. There is no essential disagreement among the sources I consulted. Green and Fenderson list 30 species each while Smith and Fletcher list only 29. However, Fenderson reports P. sumatrana (from Sumatra) was discovered in 1939 when events in that part of the world were in a state of flux with the beginnings of WWII, etc.

Quoting Smith and Fletcher, "It is not always easy to draw a definite line between some of the sections of Primula, but Candelabra seems to be a very natural and distinct series and shows no very close association with any other section." Further, "The name indicates the general appearance of the inflorescence where there is usually a number of superimposed umbels."

Paraphrasing Smith and Fletcher that is not 100% true as some other primula have similar inflorescence as do those few candelabra with only a single whorl of flowers. In these few cases farina somewhere on the inflorescence (or lack of) and the shape of the seed pod are diagnostic. With few exceptions seed pods are globose or round. The exceptions occur in P. cockburiana, poissonii, anisodora and wilsonii.

All species in the section are perennial though some are short lived and the species P. imperialis (Java), miyabean (Taiwan/Formosa) and sumatrana are from tropical or semi-tropical Asia and probably not hardy. All species in the section are from Asia. The westernmost is from Sikkim (P. ianthina), the easternmost from Japan (P. japonica) and the tropicals mentioned earlier. The majority can probably be described as occurring mostly in central Asia, in the north and east of the Himalaya Mountains.

In most species seed are freely set, though experts differ on how freely they hybridize in nature. In addition, P. japonica, the easternmost species on the island kingdom of Japan, is a tetraploid (double chromosomes). I have seed of Ralph Benedict's double pink japonica (all single flowered) x a pin-eyed Pagoda (tuchisia colored). It would be interesting to know if anyone here has crosses of P. japonica with other species or seed strains.

The usual witchcraft recommendations for seed germination are made by each authority. If seed are not sowed outdoors, store seed in the fridge to allow seed to complete any chilling necessary to break seed dormancy. Candelabras, as a group, grow astonishingly fast, needing fertile soil and lots of water. Seedlings should be transplanted as soon as you can pick them out or be thinly seeded and allowed to grow the first year in the seed pan. Division is best done as soon as growth begins in earliest spring. The more robust species can be divided after blooming.

Most candelabra species welcome a bit of shade but if nutrient and water needs are met most do okay in full sun. Propagation to increase special plants is by division and by root cuttings of longer roots. Herb Dickson did it with a rototiller (not recommended). An Englishman in the Winter 1984 issue of Primroses says he chops the roots to 1/2" sections, mixes them with moist peat, puts them in a clear plastic bag and simply hangs the bag in a light but shady area. P. aurantiaca sets a few leaves in the top of the inflorescence. This can be pegged down to root or handled as a cutting.

Grace Dowling says, "It should be every gardener's solemn duty to dig up and burn every candelabra primula with muddy, dirty colors as soon as the blossom opens, otherwise the fine colors will be lost and there will be only mediocre strains, neither worthy nor desirable." I believe that's a good general rule for all primula.

The first species in the section was P. prolifera, discovered in the Khasia mountains of Assam in 1820. P. sumatrana, as indicated earlier, was discovered in Sumatra in 1939. A quick check of the Primrose Dictionary indicates the Primula Section Candelabra is the only section which does not...
have a species named for the section. With the change of the name of the section to Proliferae, that is now in order.

**Asiatic Primroses**

Section Cortusoides
by Clifford G. Lewis
Primula of the month—November 1988

**SUB-SECTION EU-CORTUSOIDES:**

*P. cortusoides*: To 1½ ft. Lvs. ovate to oblong to 3½ in. long, cordate, lobed; flowers rose to ¼ in. across on pedicels less than ½ in. long in a many-flowered umbel, corolla notched. Late spring. W. Siberia. "There are many cultivars available with larger flowers, fringed and variously colored. One of the easiest to grow...is a beloved immemorial ally from Japan."

**SUB-SECTION GERANIOIDES**

*P. eucycla*: A small plant. It is doubtful if any plants of this species remain in cultivation.

*P. geranifolia*: Not widely offered, possibly because this is a rather coarse plant. Lvs. up to 8 in. long. Flowers rose to purple. Scape to 12 in. Nepal to S.E. Tibet. "A charming little plant."* (Who is right here?)

*P. heucherifolia*: To 1 ft. Lvs. orbicular, to 6 in. long, cordate, palmately 7-11 lobed. Flowers mauve-pink to deep purple 1 in. across nodding in 3-10 flowered umbels, corolla lobes notched. Tibet, China. Not widely offered.

*P. jesoana*: To 2 ft. Lvs. erect, orbicular – cordate, palmately 7-11 lobed. Flowers rose or rose-purple with yellow eye, ¾ in. across in 2-10 superimposed 4-9 flowered umbels, corolla lobes notched. Himalayas. "It has no place out of doors."*

*P. polyneura*: To 1½ ft. Lvs. triangular, ovate or orbicular to 1 ft. long including petiole, lobed, hairy on both surfaces. Flowers rose to crimson with yellow eye, ¼ in. across, in 2-10 superimposed 4-9 flowered umbels, corolla lobes notched. Himalayas. "It has no place out of doors."*

*P. saxatilis*: To 1 ft. Lvs. ovate to oblong-oblong, to 8 in. long inc. petiole, cordate, lobed and toothed. Flowers white, rose or purple with white eye, to 1½ in. across in 6-10 flowered umbels, calyx lobes spreading and enlarged in Japan. N.E. Asia. There are many cultivars available with larger flowers, fringed and variously colored. One of the easiest to grow...is a beloved immemorial ally from Japan."

*P. sieboldii*: To 1 ft. Lvs. ovate to oblong-ovate, to 8 in. long inc. petiole, cordate, lobed and toothed. Flowers white, rose or purple with white eye, to 1½ in. across in 6-10 flowered umbels, calyx lobes spreading and enlarged in Japan. N.E. Asia. There are many cultivars available with larger flowers, fringed and variously colored. One of the easiest to grow...is a beloved immemorial ally from Japan."

**Primula Vulgaris**

(Acaulis)

by Sharon Meredith
Primula of the Month—Dec 1988

Sharon presented a different approach to the Primula of the Month, beginning by giving a "romantic history" of Primula acaulis.

The favorite flower of England has been honored by being given its own day — April 19 is celebrated in all of England as "Primrose Day." The name Primrose comes from Middle English, the first rose (because of its early blooming period) and acaulis was added by Linnaeus, the Swedish botanist who categorized the botanical world. Primroses were carried by brides and also were placed on graves in old England. People found the plant to have medicinal purposes. Roots were smashed to produce a juice which was drunk to relieve colds and headaches.

A native to the Caucasus, *P. acaulis rubra* (sibthorpii) in the wild has starry pink petals. Hybrids have larger petals. Botanist Wilson said the acaulis was the best primrose in the world, and hybridized a blue/purple plant named for him.

Other species in this sub-section — no information available on hand.

*The quotes are Reginal Farrer's.

**Bibliography**


**What's In A Name?**
by Ann Lunn

Since the time of Carolus Linnaeus (1707-1778) the scientific name of any living thing consists of two words. Under this binomial ("two term") system, each species of plant has only one name and no two species of plants have the same name. Furthermore, these names are in Latin, a universal language, so there can be no misunderstanding which living thing is being cited.

The first word of a scientific name is called the genus and indicates a group of species which are related to one another. For example, all 'primroses' have the genus name, Primula, and thus, are related to one another. The second of the two words is the species. It is usually descriptive of a particular type of plant. The species name may describe a characteristic of the plant, identify its native country or habitat, or indicate its discoverer. Knowing the meaning of the plant's name makes it much easier to remember.

To properly write a scientific name, the genus is always capitalized and the species is always written in lower-
case. (Some older books capitalize the species name if it refers to a person. This is no longer followed.) The binomial name is written in italics, or if that is not possible, underlined. Scientific names of primroses are seen on labels at shows and in the Quarterly. What do they mean? The following is a list of the more common Primulas and their definitions.

**Primula veris** veris = of the spring  
**Primula auricula** auricula = ear shaped (leaves were thought to be shaped like bear's ear)  
**Primula x polyantha** polyantha = many flowered (many flowers on a stem)  
**Primula minima** minima = smallest, dwarf  
**Primula vulgaris** vulgaris = common  
**Primula denticulata** denticulata = toothed slightly (referring to the leaf edges)  
**Primula clusiana** clusiana = refers to Clusius, an early physician and botanist  
**Primula japonica** japonica = from Japan  
**Primula saxatilis** saxatilis = found among rocks  
**Primula farinosa** farinosa = meal, powdery (referring to leaf or stem surfaces)  
**Primula trondosa** trondosa = leafy  
**Primula hirsuta** hirsuta = hairy (referring to the leaves)  
**Primula amoena** amoena = charming, pleasing  
**Primula cusickiana** cusickiana = refers to Cusick, early northwest plant explorer  
**Primula nevadensis** nevadensis = native to Nevada  
**Primula angustifolia** angustifolia = narrow-leaved  
**Primula elatior** elatior = high, lofty  
**Primula alpica** alpica = inhabiting the mountains  
**Primula allionii** allionii refers to Allioni, botanist (1705-1804)  
**Primula spectabilis** spectabilis = remarkable  
**Primula juliae** juliae = refers to Mme. Julia Ludovikovna Mlokossjewicz, the discoverer  
**Primula marginata** marginata = margined, referring to farina on leaf margins  
**Primula ellisiae** ellisiae = refers to Miss C. Ellis, the discoverer  
**Primula secundiflora** secundiflora = side flowering  
**Primula villosa** villosa = shaggy

---

**MT. TAHOMA NURSERY**  
RICK LUPP (206) 847-9827  
ALPINES, WASHINGTON STATE NATIVES, SPECIES PRIMULAS

Nurseries: Open By Appointment Only  
Mail Order: U.S. & Canadian Only  
Send $1.00 For Both Lists  
28111-112th Avenue E., Graham, Washington 98338

---

**BIJOU ALPINES**  
MARK DUSEK (206) 893-6988  
RARE AND UNUSUAL ROCK GARDEN, SCREE AND BOG PLANTS

---

**RA-PID-GRO®**  
Plant Food

To establish healthier, bigger and better plants, use RA-PID-GRO® Plant Food with FORTI-5™ micronutrients.
SEED of DOUBLE ACAULIS
NEW SEED CROP IN AUGUST
Minimum Order - 50 seed - $5.00
Roseita Jones
Phone 852-0330
6214 South 287th Street
Kent, Washington 98031

The ALPINE GARDEN Society
ANNUAL SEED DISTRIBUTION LIST, with preferential treatment for overseas members. Some 5,000 varieties, including new introductions otherwise unobtainable
Subscription for overseas members is £12.00 or $19.00 - payable to the Secretary:
E.M. Upward, Lye End Link, St. John's, Woking, Surrey, England

Gold-Laced Polyanthus Seed ...... $2 (U.S. or Can. for 25 Seeds)
Blue Cowichan Seed ............ $2 (U.S. or Can. for 25 Seeds)
Mixed Cowichan Seed .......... $2 (U.S. or Can. for 40 Seeds)
All hand-pollinated from our prize-winning stock.
JOHN KERRIDGE

The Quarterly Bulletin
known in 27 Countries throughout the World for its illustrations and technical standards.
ANNUAL SEED DISTRIBUTION LIST, with preferential treatment for overseas members. Some 5,000 varieties, including new introductions otherwise unobtainable.
Subscription for overseas members is £12.00 or $19.00 - payable to the Secretary:
E.M. Upward, Lye End Link, St. John's, Woking, Surrey, England
— Send for fully descriptive folder —

NATIONAL AURICULA AND PRIMULA SOCIETY - Northern Section
Invites all Auricula and Primula Lovers to join this Old Society
Membership includes year Book
D. G. Hadfield
146 Queen Road, Chudleigh Harthorne, Chudleigh, Cheshire, England

American Primrose Society
American Primrose Society

Officers
President: Larry Bailey, 1570 9th Ave. N., Edmonds, WA 98020
Vice President: Vasco Fenili, 7102 Citrine Lane S.W., Tacoma, WA 98498
Recording Secretary: Ann Lunn, Route 5, Box 93, Hillsboro, OR 97124
Treasurer: Jay Lunn, Route 5, Box 93, Hillsboro, OR 97124
Past President: Irene Buckles, 13732 - 45th Ave. S., Seattle, WA 98168

Directors
Rosetta Jones, Kent, WA
Ruth Korn, West Linn, OR
Etha Tate, Milwaukee, OR
Kris Fenderson, South Arcowth, NH

Presidents of affiliated societies and chapters
Cyrus Happy III, Tacoma, WA
David Vesell, White Bear, MN

Membership
Dues of $10 a year are payable NOV. 15. Membership includes four issues annually of the Quarterly, cultural chart and seed exchange privileges. Sustaining member $50; Life membership, $200; garden club affiliates societies, $10 a year; library and horticultural societies, $10 a year; second member in family, $1 a year. Overseas members, $10 a year; please send by international money order. Send dues to the treasurer.

Publications
Back issues of Primroses are available. Order from the secretary. Manuscripts for publication in the quarterly are solicited from members and other gardening experts, although there is no payment. Please send articles and photographs to the editor at 1236 Wendover Ave., Rosemont, PA 19010.

Advertising rates per issue: full page $60; half page $30; quarter page $15; eighth page and minimum $10. Submit advertising to the editor.

Seed Exchange
Peter Atkinson, 16035 SE 167th Place, Renton, WA 98058
Joe Dupre, 2015 N. Avenue, Anacortes, WA 98221

Show Judges
Al Rapp, 4918 79th Avenue W., Tacoma, WA 98467

Slide Library
Jerry Flinton, 154 N.E. 194th, Seattle, WA 98155

Editor's Committee
Richard Critz, Editor, 1236 Wendover Avenue, Rosemont, PA 19010
Joe Dupre, 2015 N. Avenue, Anacortes, WA 98221
Steven Krumm, 11505 S.W. Summerville Avenue, Portland, OR 97219
Dee Peck, 8813 Patton Road, Philadelphia, PA 19118
New and improved strain of garden auriculas, the result of 30 years of selecting and breeding for better color and vigor.

BLUE GARDEN
YELLOW GARDEN
MIXED GARDEN
DICKSON'S PETITE HYBRIDS
(a mixture of small-species hybrids)
MIXED EXHIBITION ALPINES

The above $1.00 per packet of 50 seeds

Hand-pollinated show auriculas
Red self, yellow self, green-edged
$2.00 per packet of 25 seeds

CHEHALIS
RARE PLANT NURSERY
2568 JACKSON HIGHWAY
CHEHALIS, WA 98532

Minimum order $5.00.