Flowering Gift Plants
THEIR CARE AND HOW TO REBLOOM THEM

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Flowering Gift Plants

THEIR CARE AND HOW TO REBLOOM THEM

The custom of giving flowering plants for special occasions is an excellent one. Gift plants are always appropriate, whether they are sent to a hospital patient, newly elected women’s club president, or to mother on her birthday. But they are good buys at any time, and should become a regular decorative feature of your home, office, church, and clubs. Many of these plants have exquisite blooms, providing a “living bouquet” that outlasts cut flowers if cared for properly.

It is probably best to discard most pot plants when they are through blooming. Some of these plants require specialized growing conditions that are difficult to duplicate in the home. Quite a number of them bloom only once a year; others are seed-propagated annuals that will not flower again. Potted bulbs such as tulips, daffodils, and hyacinths are depleted of food and energy and seldom flower for a season or two, even when planted out in a well-tended bed.

Despite these problems, many plant lovers simply refuse to toss out a choice poinsettia or azalea, or relegate old bulbs to the compost pile. For those who won’t be dissuaded, the following brief cultural directions are given. In many cases your efforts may be rewarded with fairly satisfactory results. But don’t be disappointed if performance isn’t quite up to that of greenhouse-grown plants.

FLOWERING POT PLANTS DESERVE GOOD CARE

Proper care will extend the blooming period of pot plants and increase your enjoyment of them. Never overlook the fact that plants are living organisms and need favorable growing environments. The consistently successful window gardener provides the proper light, temperature, moisture, and soil conditions. Most pot plants are greenhouse-grown under almost ideal conditions, and moving them to the flower shop and then into the home may affect them adversely. Provide growing conditions as much like those in the greenhouse as possible, especially if you plan to rebloom the plants.
It's wise to buy plants that have a few flowers open and many buds. With reasonable attention, these buds will open over a considerable period of time, bringing you maximum satisfaction from your plant. Remove withered blooms to prevent seed-set from sapping the plant's strength. Take off damaged or diseased leaves and stems.

The attractiveness of most plants can be enhanced by periodic cleaning. Place the plant in the sink and gently syringe the foliage with water at room temperature, taking care that the water pressure is not excessive. If syringing is impractical, wipe smooth-surfaced leaves with a soft, damp cloth. When the foliage is quite dirty or limespotted, use a mild detergent in the water and follow with a clear water rinse. Clean plants in the morning if possible.

Foliage waxes and other leaf-shining materials, sold under a number of trade names, impart a pleasing gloss to the leaves. These preparations are usually safe, but it is a good idea to try them on a leaf or two to see if any damage results. If none occurs within several days, use the preparation on the entire plant — but keep it off the flowers and buds. Water plants thoroughly before using these materials, and never use on wilted plants or those in dry soil. Don't apply on hairy leaves, such as those of African violets or gloxinias. Brush these leaves with a soft camel's hair brush, or rinse gently with lukewarm water. Oil and milk are sometimes used to shine foliage. These are poor because they clog leaf pores (stomates) and catch dust badly.

**Watering**

Never water plants by "rule of thumb," such as every other day, twice a week, etc. Give them water when they need it! Check your plants every morning — sometimes more frequently. Once the soil is thoroughly moistened, don't water again until it begins to dry out. Remember that plants in cool rooms need less water than those in a warmer, drier atmosphere. As a general rule, blooming plants and those with much foliage require larger amounts of water than those without blooms or with sparse foliage. Keep plants that are dormant (in rest period) somewhat drier. Strangely enough, soil often dries more rapidly in winter when the home is artificially heated and humidity is low than in normal summer weather.

Learn to gauge the moisture content of soil by its color and "feel." As the surface dries, it gets lighter in color. When soil is too dry, it becomes firm and sometimes cracked, especially away from the pot — but is slimy and sticky when saturated. For most plants, aim at a
moderate soil-moisture content. Never allow plants to go for long in soil that is water-logged or bone-dry. In either case, roots will be damaged. Wilting never benefited any plant.

Ordinary tap or well water is usually satisfactory for watering plants. Use it at room temperature. The chlorine and fluorine sometimes added to city water is not harmful. Rain water or melted snow are excellent, but do not use softened water on pot plants.

Plants can be watered either from above or below, or both. If you prefer surface-watering, use a small-spouted watering can, and try to keep moisture off the foliage and out of the foliage crowns of such plants as African violets and cyclamen. Give enough water each time to soak up the entire soil ball, not just the top inch or two. If excess water drips through the drainage hole, you can be fairly certain that you are adding sufficient water.

To water a plant from the bottom, set the pot in a pan or saucer filled with water. (Dunking the pot in deep water does the job more quickly.) Moisture gradually reaches the top of the soil mass by capillarity. When the surface becomes moist, the entire soil ball is wet. Then remove the pot and allow excess water to drain off. If you make a practice of bottom-watering, water from the top every week or two to leach out salts that accumulate on the soil surface.

When pots without drainage holes are used, always put an inch or two of coarse gravel in the bottom. Water with great caution.
Drainage

Most plants received from the florist will have adequate drainage. But it's a good idea to check the drainage hole for clogging. When repotting, arch pieces of broken pottery over the hole before putting in soil. Be careful not to seal the hole. Saucers placed under the plants to catch drainage water should be emptied promptly. If the pot is wrapped in waterproof material such as tinfoil or cellophane, don't allow water to accumulate in the bottom.

Plants in jardinieres or paper-maché containers should never stand in water very long. Plants with "wet feet" soon look sick — flowers begin to wither, and the leaves yellow and may fall. This condition is due to stagnation of the water and insufficient oxygen in the soil.

Light

Although certain plants require more light than others, all flowering plants need moderately bright light to keep them in good condition. Plants kept continuously in a poorly lighted part of a room soon show the effects of low illumination — spindly shoots, few flowers, bad foliage and flower color, and slow growth or no growth at all.

Most flowering plants need bright light the greater part of the day. South, east, or west windows (unshaded by a porch, overhang, or nearby trees) are usually excellent locations. But keep plants that are in bloom out of direct sunlight. The sun’s heat wilts flowers quickly.

Abrupt changes from a relatively dark spot into very bright light, and vice versa, will do more damage than if the plant had a chance to become gradually acclimated to the new situation. Turn plants at weekly intervals for more symmetrical growth. More specific recommendations about light requirements are given in the discussion of each type of pot plant.

Light in the average room, well away from windows, is not bright enough for most flowering plants, even when ceiling fixtures are on. Mazda or fluorescent lamps, located fairly close to house plants, are helpful; but the considerable heat generated by mazdas can be damaging. A plant in strong light can withstand higher temperatures than one in poor light. The latter can make little food, and is using up its reserves in respiration induced by the high temperatures. Never be fooled into thinking that fertilizer and water will cure a plant that really needs more light.

Temperature

Proper temperatures for gift plants are often difficult to manage in the home or hospital. A hot, dry atmosphere does more to shorten
HUMIDITY AND VENTILATION

blooming life than any other factor. For most gift plants, try to find a bright spot where temperatures will range from 65° to 75° F. during the day and between 50° and 55° F. at night. This may mean moving the plants to a cooler room at night, or placing them on a sun porch that warms up in the daytime yet cools off sufficiently after sundown. At any rate, lower the thermostat at night in winter!

A number of blooming plants should be kept somewhat warmer. These include African violets, gardenias, gloxinias, poinsettias, roses, and wax begonias. Night temperatures between 58° and 60° F. are adequate for these plants; daytime temperatures should be 10 to 15 degrees warmer. See later sections for more specific directions on temperatures for various plants. These recommended temperatures are based on standard greenhouse growing practices, and you should try to duplicate them as closely as possible — especially when reblooming gift plants.

In winter, plants near a window may be much cooler than those elsewhere in the room. These conditions may be all right for plants requiring lower temperatures, but could be detrimental to the warmth-loving kinds. Have a thermometer handy for checking. Pull the blinds or drapes at night during severe winter weather to protect plants near windows.

Keep plants out of either hot or cold drafts and well away from radiators, hot-air registers, and air conditioners. Plants taken outside for delivery in winter should be inner-wrapped with several thicknesses of newspaper for insulation, and the outer wrapper should be tight.

Humidity and Ventilation

Most homes and hospital rooms are extremely dry in winter. This situation is unhealthy both for plants and humans, and a humidifier of some kind should be installed, even if it’s nothing more than evaporative pans on radiators. In the flower window, a water-tight plant tray filled with moist gravel or sand is helpful. Although occasional misting of the foliage increases humidity, it may also encourage spread of diseases. A relative humidity of at least 40 to 60 percent is desirable. Not only is plant growth benefited, but the tender blossoms of holiday plants last much longer.

Plants use carbon dioxide and give off oxygen during the day, and the situation is reversed at night. The amounts of gases involved in these exchanges are so small, however, that special ventilation is seldom required. One reason for ventilating could be to remove any trace of ethylene gas in the air. Ethylene is an ingredient of manufactured gas, and is often present in natural gas that has a little manu-
factured gas mixed with it to give an odor. Improper combustion of coal, kerosene, and gas stoves or furnaces may also release ethylene. Watch for even very small leaks in gas lines. Ethylene gas given off by very ripe fruit (especially pears and apples) and decaying vegetable matter can be equally bad in a close, poorly ventilated room.

Even minute amounts of ethylene in the air (several parts per million) may seriously injure certain sensitive plants or ruin their flowers. These amounts are far too small to harm humans — or even be detected by odor. If you suspect gas injury, plant several tomato seeds in a pot and watch the development of the seedlings. Tomato plants are extremely sensitive to ethylene, and its presence will cause their leaves to arch downward abnormally and sometimes turn yellowish.

There is no scientific basis for removing plants or cut flowers from a sick room at night, at least as far as the patient is concerned — the amount of oxygen that plants take from the air is very small.

**Disease and Insect Control**

When purchasing a gift plant, check to see that it is insect- and disease-free. Reliable florists sell only clean plants. If pests are present, they may be difficult to control under home conditions, and may spread quickly to other house plants. Both sucking- and chewing-type pests can do a great deal of damage in a short time. Always carefully inspect plants brought in from outdoors.

Occasionally syringing the plant with water at room temperature not only helps keep the foliage clean but also washes away many insects, and can be considered a minor form of insect control. Syringe in the morning, and allow the foliage to dry as quickly as possible. When you first notice insects on your plants, eradicate them before they multiply and become a real problem.

If you have only a few plants, you may want to buy an aerosol applicator containing one of the new all-purpose insecticide mixtures. If the larger insects, such as mealybugs and scale, are not too numerous, they may be eliminated by touching them with a cotton swab dipped in alcohol. Insecticides in dust form are seldom practical indoors, and they leave an unsightly residue. Burn any plant that has root-knot nematodes, and sterilize the pot in boiling water for 30 minutes before re-using.

One of the newer spray materials, *malathion*, has proven a good general-purpose insecticide. Mix and apply as directed on the package. Repeat applications should be spaced a week to 10 days apart. The
very tiny red spider (two-spotted mite) can usually be eradicated with several sprayings. Hit the undersides of the leaves, for this is where these pests usually live and do their damage. Frequently, however, you notice the mottled appearance of the top of the leaf before you are aware that red spiders are present. Close examination may reveal tiny webs and spiders in all stages from eggs to very active mature adults.

Aphids, sometimes called plant lice or aphis, are readily killed by one or two malathion sprayings. Mealybugs are resistant, but several applications should do the job. Hit the white cotton-like masses and all parts of the stem and leaves. Scale insects are rather tough pests too, so don't expect one dose to clean them up. In the immobile adult stage, they scarcely look like insects at all. Malathion is also effective against white flies, thrips, and a number of other chewing and sucking insects.

Proper care of plants will do much to prevent the onset of diseases. Frequent wetting of foliage encourages mildew and other fungus disorders, and may spread bacterial organisms. Overwatering encourages fungus root- and stem-rots and other soilborne diseases. Pick off any diseased or damaged plant parts. A badly diseased plant can seldom be cured, and should be destroyed. A virused plant should be discarded. The symptoms often include streaked or mottled foliage. No effective treatment is known, and virus is transmitted in cuttings or divisions made from the old plant. Destroy diseased plants by burning, or put in the garbage can for disposal. Carelessly tossing them into
the garden or using them in the compost pile spreads the disease organisms promiscuously.

Consult your local florist, farm adviser, or extension specialist for help on specific insect and disease problems.

**Repotting**

As received from the florist, flowering pot plants won’t need repotting unless you plan to rebloom them. Even then, certain plants—African violets, amaryllis, and gardenias, for example—may not require repotting for a considerable time. When the plant becomes
“root-bound” (roots massed around soil ball next to pot), or when it requires very frequent waterings, the best rule is to repot — or “shift,” as the florist would say — into a larger container.

A good general potting-soil mixture is composed of the following:

- 3 parts fibrous loam
- 2 parts shredded peatmoss, compost, or leafmold
- 1 part sand (less if soil is already quite sandy)

For acid-loving plants like azaleas and gardenias, use a higher proportion of peat. Have the mixture just moist enough so that it sticks together when compressed in the hand, yet crumbles apart readily. When shifting to a larger pot, use one that is 1 to 1½ inches larger in diameter. Don’t “overpot.” Too large a container makes it easy to overwater a plant. Try to keep the pot and top-growth in proportion.

If possible, sterilize all soil and pots used. This practice is a real aid in controlling disease organisms, weeds, nematodes, and soil insects. For further information, see Circular 793, “Soil Sterilization Methods for the Indoor Gardener.”

When repotting, remove some of the old soil from the top of the soil ball and any soil that comes away from the roots easily. Use care not to damage the root system unnecessarily. Arch pieces of broken pottery over the drainage hole; then put some soil in the bottom of the pot. Hold the soil ball in place, centering it carefully. Keep the plant at the same depth at which it grew previously, unless it is quite “leggy” (tall and gangly). In that case, set it lower in the pot. Continue adding soil around the roots, and firm gently. The soil should be in close contact with all the roots, but should not be tamped so much that it becomes compacted. Leave the surface loose.

Be sure to leave an adequate “water-space.” For routine waterings, it should hold enough water to moisten all of the soil in the pot and allow a little water to drip from the drain hole. The soil level should be about 3⁄8 inch below the rim of a 3-inch pot, ¼ inch below the rim of a 4-inch pot, ⅜ inch below the rim of a 6-inch pot, etc.

Water the newly repotted plant several times, making sure that the entire soil mass is thoroughly moistened. Then wait until the soil is on the dry side before watering again. Over a period of time, top-watering tends to puddle and compact the surface. Occasionally break up this crust with a table fork to allow better water penetration and aeration.

A wide choice of containers is available. Unglazed earthenware pots are most popular and quite inexpensive, but they require some-
what more frequent watering than glazed, plastic, or metal containers, and do not necessarily grow better plants. Avoid pots without bottom drainage holes. Proper watering is difficult in them, and drainage moisture accumulates in the bottom (see “Drainage,” page 4). Self-watering pots, using fiberglas wicks, are not very useful for most flowering pot plants, although African violets do well in them.

Fertilizing

You can be fairly certain that newly purchased plants will need no fertilizing while in bloom. For those that are to be rebloomed, however, a regular feeding program is necessary.

Plants repotted in new soil can do without any supplementary fertilizing for a few weeks, or until they are well established. When used strictly according to manufacturer’s directions, both the fully soluble and dry garden-type fertilizers are satisfactory. The soluble complete types especially formulated for house plants (Hyponex, Instant Vigoro, Plant Marvel, Ra-Pid-Gro, etc.) are more convenient, although somewhat more expensive, than the dry garden types. Since the formulas for different brands vary widely, follow the dilution recommendations on the package carefully. So-called “complete” fertilizers contain the three key mineral elements — nitrogen, phosphorus, and potassium.

A liquid feeding every 4 to 6 weeks is usually ample when the plant is growing actively. Give little or none during rest periods, and reduced amounts in winter when light intensity is low. Put on enough liquid fertilizer each time to moisten all the soil, but don’t apply to dry soil.

Plant response is the best index as to whether you need to fertilize. The experienced plantsman learns to recognize signs of starvation or overfeeding. A stunted plant with yellowish-green lower leaves (which may drop) is usually nitrogen deficient, although improper watering practices may cause poor lower leaves and leaf-drop. Overwatering sometimes results in new growth that is yellowish-green. Overfeeding is also harmful. Nitrogen excess, for example, induces soft, lush growth and poor flowering. A home soil-testing kit or tests made by a reliable laboratory can be very helpful to the amateur as well as to the professional gardener, but it isn’t practicable to make soil tests for only a few pot plants. Very little soil can be removed from the pots without severely damaging the root systems.

Don’t be a “fertilizer faddist.” Many people mistakenly believe that only organic fertilizers should be used; but both organic and inorganic fertilizers are satisfactory sources of nutrients for house plants.
Buy standard, reliable types. Ignore advice that coffee grounds, skim milk, egg shells, castor oil, and earthworm castings will greatly benefit your potted plants. Most of these materials have little nutritional value, and some of them may actually be harmful.

**Propagation**

Rather than attempt to rebloom the old plant, it is sometimes better to start a new plant or two by vegetative propagation. Young shoot tips ("slips" or cuttings) 4 or 5 inches long can usually be successfully rooted by the amateur. But some of the woodier plants will give you trouble. Remove cuttings just below a node (the point where leaf joins stem), using a sharp knife. Carefully strip all leaves from the lower 1¼ inches of each cutting, but do not remove or trim the rest of the foliage. If you have hormone rooting powder, dust it over the cut surface and blow off all excess.

Stick bases of the cuttings about 1 inch deep in the rooting medium. Firm in gently and water well. The medium can be clean, sharp sand, a mixture of sand and granulated peatmoss, vermiculite, or any other inert material that will remain well aerated yet retain moisture well. Sterilize before using if possible. The medium should be constantly moist but not saturated. Be sure that drainage is adequate.

Cover each cutting with a pint fruit jar or glass tumbler to protect it from drying out. Some gardeners prefer to cover the entire pan with a plastic cake cover or a piece of polyethylene plastic to form a miniature greenhouse. Provide some ventilation to prevent moisture condensation inside. A bright (but not sunny) spot at 65°F is satisfactory for most types of cuttings during the rooting period. Pot up when roots are ¼ inch long.

Leaf cuttings of African violets, gloxinias, and certain begonias can be rooted in a similar way, but it's often simpler to root leaves of the first two in water. Partially fill a tumbler with water and stretch a piece of waxed paper or aluminum foil over the top; hold in place with a rubber band. Punch holes in the covering with a pencil, and stick the leaf-stems (petioles) through the holes so that they just touch the water. In several weeks, roots and leaves will appear.

Certain easily rooted stem cuttings, such as those of geraniums, can also be rooted by standing them in a glass containing an inch or two of water. This is an inferior method, however, and better luck can be expected with the sand method described above.

Seed germination can be a troublesome procedure, particularly if "damping-off" interferes. For a simple but reliable method, see Circular 796, "An Easy Method for Germinating Flower Seeds."
THE MORE IMPORTANT FLOWERING GIFT PLANTS

AMARYLLIS (Hippeastrum hybrids)

Pronounced Am-ar-rill-iss; Hip-pee-ast-rum

The stately amaryllis provides bright accent points for the flower window in late winter and early spring, and its short blooming season and scant foliage are more than compensated for by its easy culture. The blooming plants are displayed to best advantage when the pots and lower portions of the bare stalks are hidden by other greenery.

Keep blooming amaryllis in relatively cool, humid locations to enhance the lasting quality of the flowers. Bright light is not important, since there is usually little foliage at the time of flowering. But adequate watering is very necessary.

The secret of getting amaryllis bulbs to rebloom year after year lies largely in summer care after flowering. Remove the withered blooms and stalks promptly, but do not cut off the leaves. Give good growing conditions indoors with full sunlight. Once the danger of frost is past in the spring, sink the pots into the soil of an outside flower bed or border where they will receive sufficient water and sunlight all summer long. Light shade during the heat of the day is probably best. Apply a soluble complete fertilizer every 4 to 6 weeks.

Amaryllis are most often neglected during the summer. Good care
allows the bulb to replenish its food reserves and produce buds for
another season of bloom.

Gradually withhold water before freezing weather in the fall. When the foliage has died down, trim it off and take the pots to a cool, dry basement room (40° to 50° F. if possible) and place them on their sides. Amaryllis require approximately a 3-month rest period. They should not be watered during this time. When buds begin to push out in winter or early spring, the pots may be brought up to the warm flower window (55° to 60° F., nights; 65° to 75° F., days) and watered. Once in flower, put the plants in a cooler location.

Amaryllis need repotting only once every several years, and will bloom excellently even if somewhat pot-bound. During the rest period, however, the topsoil on each pot may be removed and replaced with a half-and-half "soil-leafmold" or "soil-manure" mixture. Use care not to disturb the root system unnecessarily. When repotting, put the bulb in a pot that is 2 to 3 inches larger in diameter than the bulb itself. Provide good drainage, and use the standard potting mixture. Don't remove any firm, live roots from the bulb. Spread them well and center the bulb in the pot. Then firm soil around the roots. The upper ¼ to ½ of each bulb should show above the soil surface. Have the final soil level about ¾ inch below the pot rim. Always pot up amaryllis bulbs singly.

Small side-bulbs, which produce flowers identical to those of the parent bulb, can be removed and individually potted. This is the simplest means of propagation, although the commercial gardener uses other methods too. Seed pods set easily on amaryllis; but seed germination is slow, and seedlings require 2 to 5 years to reach blooming size, even under greenhouse conditions. They also give a wide variety of flower forms and colors, many of them inferior.

When purchasing new bulbs, select large, plump specimens free of mold or rot. For good flowering the first season, they should be at least 2½ inches in diameter. Amaryllis bulbs are usually potted up from October through January. It is best to keep the soil on the dry side until growth appears. Keep the potted bulbs at 60° to 70° F. and out of the sun during this period. When growth begins, move to a warm, sunny window and water more freely. Flowers up to 7 or more inches in diameter will be the reward — and only a few weeks after potting. A top-grade bulb should produce two flower stalks with at least four flowers on each.

Insects and diseases are seldom a problem with this aristocrat of the tender spring-flowering bulbs. Mealybugs and scale are the insects most often bothersome. Discard any bulbs that are diseased.
ASTER (Callistephus chinensis)

Pronounced Ass-ter; Kal-liss-tef-us

The China aster, although often plagued by fungus and virus diseases, has long been popular in gardens. Florists grow it as a cut flower, and several dwarf base-branching varieties are now being grown as pot plants, sometimes offered under the name "Beauty Flower." Blooming plants should be cared for much as potted chrysanthemums. If held moderately cool and in bright light, they are remarkably durable. Keep the soil moist, but avoid overwatering.

The China aster is an appealing, moderately-priced gift plant, but it should be discarded when it is through blooming. The aster is an annual, produced from seed. Successful production of potted asters requires rather exacting temperature and day-length conditions, high light intensity, and the proper selection of varieties. At present, few available varieties respond to this type of culture, and it is not recommended that the window gardener attempt to grow the China aster as a pot or house plant.
AZALEA (Rhododendron species and hybrids)

Pronounced Az-zay-lee-uh; Roe-doe-den-dron

The azalea’s strikingly beautiful flowers in various patterns and shades of pink, rose, red, crimson, orchid, and white brighten any home or sickroom. Florists use several types for forcing, including a wide range of flower sizes and forms. Some of these are partially double. The four major classes grown are the Indicas or Belgian azaleas, the Kurumes, the Rutherfordiana group, and the Pericats. All are handled similarly in the home. If at all possible, the azalea should be kept in a cool spot while in flower, especially at night. Although azaleas hold up amazingly well in a warm, dry atmosphere, they bloom out far too quickly and blossoms last only a short time.

Purchase plants with many buds and just a few opened flowers. In a cool situation with bright light, all buds will develop to give an almost unrivaled riot of color. Occasional syringing of foliage with tepid water is beneficial. Never let the soil dry out excessively. A good way to water an azalea when the soil has become quite dry is to submerge the pot in a deep pan of water. Leave in the water until bubbles stop rising, then remove and let excess moisture drain off.

The azalea can be rebloomed, but if you don’t provide the proper conditions, you are sure to fail. After blooming, remove all withered flowers and keep the plant in its cool, sunny location. It should continue to grow actively. Shift to a larger pot if the roots appear crowded. Ordinarily, azaleas don’t need shifting more than once every several years. Before repotting, knock out of the pot and remove some of the old soil from the roots. Use acid peat alone or a mixture of 1 part well-prepared potting soil and 3 parts acid peat. In areas where the soil is quite acid, reduce the amount of peat used.

In mid-May, plunge the pot in a semi-shaded, somewhat protected spot outside. Surrounding the pot with moist peat will help hold moisture in the soil ball. Don’t neglect during the summer. Water and fertilize regularly, and watch for pests such as red spiders, mealybugs, aphids, and slugs.

Chlorotic or yellow foliage is usually caused by soil that is too alkaline, with the resulting deficiency of iron. Either chelated iron or iron (ferrous) sulphate will help remedy or prevent this condition. Iron sulphate increases the acidity (lowers pH) and supplies iron. The use of ammonium sulphate fertilizer (1 scant teaspoon to 1 quart of water; or 1 ounce to 2 gallons) also aids in maintaining acidity. A convenient method is to apply both iron sulphate and ammonium sul-
phate at the same time (½ teaspoon of each to 1 quart of water; or 1 ounce of each to 3 gallons). When the plant is growing actively, apply this mixture every 2 to 3 weeks. Give only enough each time to thoroughly moisten the soil in the pot. For every third feeding, substitute a soluble complete fertilizer for the ammonium sulphate. Chelated iron and fertilizer can also be mixed and applied simultaneously. Ideally, the pH in azalea soil should be about 5.0. If your water supply is alkaline, consider using rain water.

Before mid-summer (by July 1), carefully shape your azalea by removing the tips of all rapidly growing shoots. Keep the plant outdoors in the fall as long as you can. But before frost, bring it inside to full sun in a very cool room. Aim at a temperature of 40° to 50° F. from November until the first of the year. An unheated sunroom or enclosed porch is ideal. Or the plant may be given some protection outside in a coldframe until quite cold weather arrives. Continue to give good care during this cool period when flower buds are developing, but withhold fertilizer and reduce watering. Without the cold treatment, probably few if any flowers would form.

As the buds continue to swell in January or early February, move the plant to a sunny window in a somewhat warmer room and apply liquid fertilizer. The temperature for forcing should be near 60° F. at night (10 to 12 degrees warmer during the day), with plenty of humidity in the air. In a few weeks, flowering begins—and your efforts will be lavishly rewarded. At excessive temperatures, buds may "blast." To prolong flowering, remove green shoots as they develop around the flower buds.
BEGONIA

Pronounced Beg-goh-nee-uh

Christmas Begonia (B. socotrana). If purchased when full of buds and given considerate care, the Christmas begonia will continue blooming for weeks. This colorful gift plant is most commonly found in florist shops at Christmas time, but it is often available from September through early spring.

Give this plant bright light. Although normal room temperatures are satisfactory if the humidity isn’t too low, the Christmas begonia should be moved to a cooler room at night (55° to 60° F.). Attention to watering pays dividends in longer and better flowering. The most popular Christmas begonias include the familiar Lady Mac, Marjorie Gibbs, Melior, and some of the newer Norwegian varieties.
The so-called Holland begonia, actually a hybrid form (*socotrana × tuberhybrida*), is also sometimes offered.

Because the Christmas begonia is so attractive, many people keep it for reblooming. The best advice is to discard this plant after it has flowered. It is a “problem crop” in the greenhouse and extremely difficult to grow well in the home.

The following directions are for those who won’t be dissuaded. Take cuttings after flowering. When well rooted, pot up in a friable soil mixture. (See Wax Begonia.) During the summer, give partial shade but bright illumination. If moved outside, the plants must be well protected from wind and beating rain. Pinch in summer to encourage branching, and support as necessary. Feed and water regularly. As cool fall weather approaches, take inside to a sunny window and give full sunlight. Aim at a night temperature of 60° F., and 70° to 75° F. during the day. Since the Christmas begonia is a short-day plant, don’t allow light to strike it after dark. With a great deal of luck, your Christmas begonia should flower around the end of the year.

**Tuberous-Rooted Begonia** (*B. tuberhybrida*). This summer-blooming form has become increasingly popular as a flowering pot plant because of its magnificent blooms. The doubles are of greatest interest; they are available in a number of appealing forms, such as the ruffled-, rose-, camellia-, and pendant-flowered varieties. Many have flowers 3 to 6 inches in diameter. Don’t be alarmed if your plant bears two single flowers flanking the double. The singles are “female” and the double, “male.” Individual blooms are very effective in corsages and rose bowls.

Give your plant bright light but not direct sun. Strive for a semi-cool location. Florists grow tuberous begonias at temperatures between 55° and 60° F. at night and 10 to 15 degrees warmer during the day. Never let the plant wilt because of inadequate watering, but avoid getting water on the foliage and flowers. If flowers and buds begin to fall, check these points: too high temperatures; poor drainage or over-watering; dry soil; and excess sunlight. Monthly applications of a soluble complete fertilizer should be adequate.

Gradually withhold water in early fall. When the tops have died down, remove tubers from the soil, clean off all debris, wash, and allow to air-dry several days. Then store in dry sand, peatmoss, or vermiculite in a cool, dry basement room (around 40° to 45° F.). An easier method is to leave the tubers in the soil. Place the pots on their sides, storing cool. Do not water.
Bring up the tubers in early spring (March or April), and start into growth in a shallow container of moist sand or vermiculite. Plant the tubers with the hollow sides up, keeping the tops just above the surface. At 70° to 75° F., root and top growth start rapidly. When well on their way, pot up individually in 6- to 8-inch bulb pans. The soil mixture recommended for the wax begonia is satisfactory, although some gardeners prefer 1 part each of soil, peat or leafmold, rotted manure, and sand. Just barely cover the tops of the tubers. Grow on under the conditions listed above. Allow only several shoots to develop on each tuber.

Although tuberous begonias can be grown indoors in summer, you'll probably have better success setting them into beds or planters out-of-doors in late May or June. Work in plenty of organic matter, and select a spot that is well-drained. A shady, protected location, such as along the north side of a building or wall (with full open sky) or in the light shade of a tree, is best. Stake to protect the brittle stems. Water regularly, and fertilize.

Tuberous begonias can be produced from seed, but this method should be left to the specialist. Your original tuber will remain in good condition for several years. For more plants, remove and root several of the young shoots from the tuber when you start it in the
spring. Leaves or leaf-segments can also be rooted, but it is better to purchase tubers. These are on the market through the early spring months. Select large, firm, top-grade tubers.

**Wax, Perpetual, or Everflowering Begonia** (*B. semperflorens*). The well-known wax begonia, an old favorite, is now available in many pleasing flower colors, several height classes, and both green- and bronze-leaved varieties. F1 hybrids, known for their vigor, have also made their appearance. Most of the single-flowered varieties are grown from seed. Commercially, the interesting semi-doubles and doubles are largely propagated from cuttings.

The wax begonia does well as a house plant, makes an excellent, moderately priced spring gift item, and can be used as a bedding plant outside in a cool, semi-shaded location. You might also like to try wax begonias in an outdoor planter, window- or porch-box. They bloom almost continuously when doing well.

If given full sun except during the hot summer months, your potted specimen will stay in good condition and continue blooming. Provide uniform watering, regular but moderate fertilizing, and temperatures no lower than 55° to 60° F. at night. In winter, avoid an excessively hot, dry atmosphere indoors. Daytime temperatures should not exceed 70° to 75° F.

When the original plant becomes overgrown, it is quite easy to start new ones from cuttings. This method is preferable to lifting old plants from the garden in late summer for winter flowering indoors.

Although your florist starts most of his plants from seed, you will have better results if you stick to cuttings. The seed is extremely fine and delicate, requiring special germination techniques. Take tip-cuttings from around the base of the plant; cuttings that have flowers or flower buds seldom make shapely plants. Root them, then pot up in a fibrous soil mixture rich in inorganic matter—3 parts soil and 1 part each of well-rotted manure, peatmoss, and sand. Shift to larger pots as needed. To encourage low branching, pinch out the tips of the main branches as the plants develop. With insufficient light, the wax begonia gets spindly and stops flowering. Lack of nitrogen causes poor foliage color and stunted growth.

**CALCEOLARIA**

Pronounced Kal-see-oh-lay-ree-uh

The calceolaria’s balloon-like flowers have earned it the name “pocket-book plant.” Another common name is Slipperwort. Although
the calceolaria is a spectacular pot plant, it is grown in rather limited quantities because of its shortcomings. Its care and culture is similar to that for cinerarias (see page 27). Most calceolarias are grown from seed and are annuals; once through flowering, they will not bloom again satisfactorily.

Your florist may have calceolarias for sale from about Valentine’s Day until June. Don’t hesitate to buy calceolarias, but regard them as you would bouquets of cut flowers — to be enjoyed while they last, then discarded.

This plant is totally unsuitable for growing as a house plant. The seeds are very small, and the seedlings are fragile and susceptible to damping-off. Late summer sowings are best. Indoor night temperatures of 50° to 55° F. are desirable. Fertilize somewhat less heavily than cinerarias. On the brighter days of spring, move the plants back out of the hot sun to prevent burning.
CALLA (Zantedeschia)

Pronounced Kal-luh; Zan-ted-desh-ee-uh

Although the calla lily is widely admired for its classic foliage and flowers, it remains of minor importance as a pot plant. The white-flowered forms (Z. aethiopica) are perhaps best known, although the yellow type with white-spotted foliage (Z. elliottiana) is more popular as a forcing subject, particularly for Easter. A pinkish, small-flowered calla (Z. rehmanni) is also sometimes grown. The so-called “flower” is actually a spathe, or protective structure for the column of true flowers inside.

Callas are rather easy to grow. They enjoy a bright — preferably sunny — spot in the front of your south flower window. Specialists recommend a night temperature of 50° to 60° F. for whites, and 60° to 65° F. for yellows and pinks. The normal daily temperature rise should be about 10 to 15 degrees. Plants in bloom hold their flowers longer in somewhat cooler situations. With copious watering and liquid fertilizer applications at 3- to 4-week intervals, your calla should thrive. It will continue growing year-round, unless lack of water brings on dormancy.
There are several alternative methods of keeping your calla for another season. Rather than bothering with the plants all summer, many people like to dry them off by gradually withholding water in June. When the plant is dormant, carry the pot to a cool basement room for storing until fall without watering. Or if you prefer, skip the drying-off, knock the calla out of the pot, and plant outside in late spring. Very light shade is desirable; rich soil and plenty of water are "musts." In late summer, dig, dry off, and store cool for a few weeks before repotting.

The best time for potting up or repotting is August and September for whites, and November for yellows. If you buy new rhizomes, get top-grade stock (2 to 2½ inches in diameter) for larger flowers. Of the whites, several dwarf varieties, such as the Godfrey calla and minor, are better for pot culture. For faster starting, keep rhizomes of yellow callas in a very warm room (90°F.) for a week or two before potting up.

Divide the stored rhizomes, clean thoroughly, and plant up singly in 4- to 5-inch pots. Discard any that show evidence of rot. For larger specimens, put several in a plant tub. A rich soil is beneficial. In the general-purpose mixture (see page 9), use 1 part each of rotted-manure and peatmoss. Set rhizomes so that just the growing tips show. Water in, and give some shade. Then water sparingly until growth is well started. Gradually move into full sun, water more heavily, and start regular feedings when established. Remember — callas are "heavy drinkers." Shift to larger containers when potbound. Always start yellow callas at temperatures no lower than 60° to 65° F.; use the temperatures given previously for whites.

**CHRISTMAS PEPPER (Capsicum frutescens)**

Pronounced Kap-sik-um

This is another reasonably priced pot plant, usually offered at Christmas time. It holds up quite well even at ordinary room temperatures and fits beautifully into the holiday color scheme. Handle in much the same way as Jerusalem cherries (see page 44). Give good light and cool temperatures whenever possible. This annual is sold in full fruit, and should be discarded when no longer attractive. Insufficient watering causes loss of leaves and rapid disintegration of fruit. The miniature peppers can be dried for condiment purposes. But use cautiously — they are very "hot."

The Christmas pepper is easily grown from seed. Gather seed from the ripe pods and store until planting time in spring or early
summer. Transplant seedlings into small pots, and shift when necessary into 4- to 5-inch pots. Use a low-nitrogen potting soil, and feed sparingly during the summer. Put the pots outside in full sun. It's a good idea to sink the pots in beds of peat to prevent the plants from drying out too rapidly. Never remove plants from their pots for planting directly in the border. Water sparingly. Pinching isn't mandatory, but better developed plants result from pinchings prior to July 1. Bring indoors in fall as frost approaches. Night temperatures of 55° to 60° F. are satisfactory.

CHRYSANTHEMUM (C. morifolium)

Pronounced Kriss-anth-em-um

Potted chrysanthemums ("mums") have deservedly become one of our most important and popular gift plants for all seasons. Even though the normal flowering date of most greenhouse types is November, scientific research has given the florist methods for getting mums into bloom any month of the year. They are available in a remarkably attractive range of colors and types, and they easily last for several weeks — even a month or more — if given proper care.
To insure a long period of blooming, purchase plants that still have some partially unopened buds. Pot mums dry out quickly, so check often to see if they need watering. Bright light conditions or full sun are also necessary to keep the plant in good growing condition and to produce full coloration in opening buds. Try to keep in a cool location, particularly at night, and avoid dry, overheated rooms during the day.

**Hardy Garden Mums.** Most pot mums are greenhouse varieties, and usually are not very satisfactory when planted out in the garden. Almost invariably they are frosted before blooming, and may lack winter hardiness. Garden mum varieties, however, are now also grown extensively as pot plants. If you should receive a potted mum of this type (check with your florist if you are not sure), plant it outside in your perennial border after flowering. Plants received in winter or spring can be set out as soon as the ground is warm.

Choose a sunny, well-drained location with good soil. If there is more than one plant in the pot, separate and plant singly. For well-branched, nicely shaped plants, cut off the stems an inch or two above the ground after flowering. New shoots will soon appear from the soil or stem base. Pinch out the tips of these shoots when they reach 4 to 5 inches in length. Do the same with all later shoots produced, but discontinue by late July. These plants should bloom profusely in autumn, giving you a second flowering in only a year.

The following spring, lift the old clumps, remove well-rooted side shoots, and plant 12 to 18 inches apart in your garden. When well-budded in the fall, some of these clumps can be carefully dug up and put into large pots. Water thoroughly and protect from the sun for several days until re-established. Keep outdoors or in a coldframe as long as possible; then bring into a cool, bright window for flowering.

**Greenhouse Varieties.** It is possible for the home gardener to rebloom florist-type mums, but they offer quite a challenge. If several plants were growing in the original pot, separate them after blooming and repot individually. Again — cut off the stems just above the soil line.

As the new shoots appear, continue to give satisfactory growing conditions — full sun and plenty of water. During the summer, sink the pots in the ground outside in a sunny, semi-protected area where they will receive adequate care. Don’t forget to apply a liquid complete fertilizer every several weeks. Watch for insects. For large, well-branched specimens, pinch or top the plant each time the new shoots are 6 to 7 inches long. Remove only the soft shoot tips. The final
pinch should be made no later than September 1. Stake if necessary.

Rather than carry on the old plant or plants, many people prefer to remove some of the new shoots that develop after cutting back and root them. Otherwise, the cultural directions are the same.

Before frost, lift the plants and place in a sunny south window indoors. Night temperatures below 60° F. will interfere with budding; so aim at 60° F. at night until buds are visible, and reduce to 55° F. thereafter. Daytime temperatures should be 10 to 15 degrees higher. If you want big specimen blooms on the large-flowered varieties, remove all buds on each stem except the central one. Allow all buds to develop on the pompon or spray types.

Buds on greenhouse-type mums will not develop until the shorter days of fall. Florists induce budding by entirely covering plants with an opaque black cloth from about 6 p.m. until 8 a.m. the next morning to artificially shorten the day-length. So remember — until buds are beginning to open, your mum plant must not be exposed to any light from a lamp or light fixture after dark. Even very dim light for only short periods will disrupt blooming.

Although you can get these greenhouse mums to rebloom, don’t expect them to be as choice as the ones you buy. It is difficult to provide the growing conditions in your home that the greenhouse grower has at his disposal.

**CINERARIA (Senecio cruentus)**

Pronounced Sin-er-ray-ree-uh; Sen-nee-see-oh

Few pot plants present as vivid an array of colors and striking patterns as the cineraria. When purchased, it is virtually a mound of flowers and buds; and with good light, plenty of water, and very cool temperatures, its blooms are remarkably long-lived.

Keep in bright light (just out of the direct sun) in the flower window. Ideal temperatures are 45° to 50° F. at night and 55° to 65° F. during the day. Cinerarias wilt if the soil is the least bit dry, so water thoroughly and often. This plant is reasonably priced, and can be purchased during the early months of the year. Since it is handled as an annual and can’t be grown on, discard after flowering.

Cinerarias are always raised from seed. It is possible to grow them at home, but you would be wiser to choose other plants that make far better house plants. The cineraria is very difficult to grow under home conditions, and disease and insects are often bothersome.

If you refuse to be discouraged, proceed as follows. Buy seed, or gather the dried seed-heads from your bloomed-out plant. For winter
flowering, sow in April or May. Seeding in late summer gives finished plants for the spring months. Grow the seedlings in the general-purpose potting mixture, and shift to larger containers as necessary. Mature plants usually need 5- to 7-inch pots.

During the summer, grow cinerarias outside in a protected place where they will receive only early morning and evening sun and dappled shade the rest of the day. Sink the pots in beds of peat or mulch to hold moisture. Space adequately to prevent spindly growth. Cinerarias are heavy "feeders," so apply a soluble complete fertilizer every 2 to 3 weeks. Never let them suffer for lack of water. When frost is expected, bring them inside to a sunny south window where the recommended temperatures prevail.
COMBINATION BOXES AND POTS

For Easter, Mother’s Day, and other spring holidays, florists often make up so-called “combinations.” These are living arrangements or bouquets of a number of small, artistically assembled flowering and foliage plants. Boxes, pots, baskets, tubs, and various other containers are suitable, and plants from 2- to 3-inch pots are placed in them. The most commonly used plants are ageratum, browallia, celosia, dwarf French marigold, pansy, petunia (both single and double), and red salvia. All are annuals. Azalea, calceolaria, cineraria, coleus, fuchsia, geranium, hydrangea, iresine, wax begonia, and various small trailing foliage plants also may be included.

Combinations may be remarkably attractive if well done. With proper care, they continue to bloom for several weeks. Water adequately, avoid high temperatures or dry atmosphere, and provide bright light like that near a south or west window. Since the plants are arranged closely together in the container for a full, finished effect, they soon become greatly overcrowded and spindling. If the soil is warm, plant the annuals out in the border for continued flowering all summer long. Other plants may be potted up and kept indoors, or used in window or porch boxes.

Combinations are usually moderately priced, and are sure to bring a touch of spring to the recipient — and continued pleasure throughout the year.

CYCLAMEN (C. indicum)

Pronounced Sik-lam-en

The cyclamen is an attractive plant for the Christmas and early winter holidays. It is usually purchased with several flowers and many buds in all stages of development. For an extended color display, give it good light (although some protection from direct sun), but cool conditions — 50° F. at night; 60° to 65° F. during the day — and plenty of humidity. An ideal place is an unshaded north or east window, close to the glass. To help maintain humidity, fill a large plate or broad, shallow pan with water. Set the cyclamen on an inverted dish, just up out of the water. The evaporating water will do a great deal towards maintaining humid air around the foliage and flowers. Check soil moisture regularly. This plant requires plenty of water and good drainage. Keep water out of the foliage crowns. Handled in this way, a well-budded specimen often continues blooming for 2 to 3 months. Bud blasting and leaf yellowing result from a hot, dry atmosphere, lack of water, or insufficient light.
Although the cyclamen is difficult to rebloom, you will be highly rewarded if you are successful. If you decide to carry it over for another season, give it a rest period by tapering off on watering after the flowers are gone. Store cool with very little watering, if any, until warm spring weather arrives. Then replant the bulb-like structure in a well-prepared potting soil with plenty of fibrous organic matter. Allow half of the "bulb" to show above the soil. Grow on in a cool, protected spot outside. Select a bright location that provides partial shade during the brightest part of the day. Give adequate water, syringe the foliage in the mornings, and feed periodically with a liquid fertilizer. Take the plant indoors before cold weather in the fall. Give full sun and the temperatures mentioned previously. Flowering should occur in midwinter. With luck, the same plant can be rebloomed over a period of years.

Burn the plant if its leaves become deformed or curled. It may be infested with the tiny cyclamen mite. This pest is very difficult to eradicate, and may find its way to your African violets or other house plants.
EASTER LILY (Lilium longiflorum)

Pronounced Lill-ee-um

Easter wouldn't seem complete without the traditional white lily. The lilies forced for Easter are usually the variety Croft or one of its sports. Although the Easter lily is a standard florist pot plant, it is not easily forced in the home.

If judiciously watered, maintained in a moderately cool, draft-free place, and given considerable light, Easter lily plants purchased from the florist will hold their blooms for several weeks. After blooming, keep the plant in a sunny window and continue watering until the foliage begins to ripen. Then withhold water and dry off completely. In May, knock the bulb out of the pot and plant outside in a sunny, well-drained bed at a depth of about 6 inches. Quite frequently the bulb will produce a few flowers again in late summer, unless growing conditions are adverse or the plant is too weak. But you should not attempt to force it again as a pot plant — its strength has been severely sapped. These lily bulbs may persist in the garden for several seasons; but since they are not reliably hardy in the colder areas, severe winters may kill them. Provide a heavy winter mulch.

Here is another way of handling your Easter lily. After the plant has been dried off in spring, leave it in the pot but put in a good growing situation so that it will resume growth. Water lightly until new shoots appear; then water more freely. Feed every 2 weeks with a complete liquid fertilizer. The plant will usually reflower about August, with smaller but fairly satisfactory blooms. After this second flowering, discard the bulb.

Although greenhouse conditions are necessary for forcing the bulbs to perfection, Easter lilies can be brought into bloom in the home with fair success. Newly purchased fresh bulbs should be potted up in late fall or early winter. Plant singly in large pots or bulb pans 5 to 6 inches in diameter, using the standard soil mixture. Plant deeply, with several inches of soil over the bulb.

A period of cold storage for rooting is not necessary. Give plenty of water, and place the pot in your brightest window. Strive for a night temperature of 60° F., with day temperatures 10° to 20° F. higher. Feed regularly for thrifty growth. Timing for blooms at Easter is not easy for the amateur, although several years’ experience is helpful. Florists find that high temperatures bring along plants that otherwise might bloom too late for the Easter holidays. The attractive golden yellow anthers are removed from commercial plants because they discolor the pure white trumpets in handling.
FUCHSIA (F. hybrida)

Pronounced Few-shuh

Although the fuchsia is no longer one of our more popular pot plants, it is a charming subject with unusual pendant flowers. Fuchsias can be grown on to give you many additional months of enjoyment. Single- and double-flowered forms as well as upright-growing and trailing varieties are offered. All bloom more or less continuously. In the spring, small sizes are often sold as bedding plants or used in combination pots.

Fuchsias require a great deal of light but need some protection from the hot sun, especially in summer. South windows are suitable if sunlight filters through a thin curtain. Unshaded east or west windows are usually quite satisfactory. Fuchsias do best in rather cool situations. A sunroom or porch where temperatures approximate 50° to 60° F. at night is ideal; day temperatures should be 65° to 75° F.

In summer, it is usually best to plant fuchsias outside in a bright but shady bed. They make attractive companion plants for wax and tuberous-begonias, and trailing varieties are particularly well suited for porch boxes, outside planters, and hanging baskets. The soil should be well prepared, friable, and moderately rich, with plenty of moisture and perfect drainage.
In the fall, gradually allow both indoor potted plants and those grown outside to go dormant for 4 to 5 weeks by drying them off. Water only enough to keep the stems plump. Loss of foliage usually occurs. Cool temperatures are desirable during this time; keep potted plants at 45° to 50° F. if possible.

After the dormant period, pot up the outdoor plants (before freezing weather) and shift the indoor plants to larger-sized pots if necessary. Remove some of the old soil from the roots. Use the standard potting mixture. Move the plants into your flower window, but water cautiously and keep out of the sun until growth is well started. When leaf buds push out, trim off all dead wood and prune back the tops severely to form a well-shaped plant. Pinch out the tips of new shoots to give good branching. Feed at monthly intervals. It is rather easy to raise fuchsias from seed, but new plants of named varieties are always started from stem cuttings. Insects can become bothersome on fuchsias and should be eradicated when they first appear.

GARDENIA (G. jasminoides)

Pronounced Gar-deen-ee-uh

The gardenia, with its lush green foliage and fragrant, waxy-white flowers, makes a handsome gift plant. But to grow it on successfully will tax your window-gardening abilities to the limit. Gardenias are not really very satisfactory flowering house plants, but some people keep them just for their attractive glossy leaves. The form known as veitchi is generally used for pot plants. It bears more flowers than the regular greenhouse varieties, although its flowers are somewhat smaller. Potted gardenias are offered for such holidays as Christmas, Easter, and Mother’s Day.

Uniform and exacting conditions are essential in growing gardenias. Unless you can approximate ideal conditions, plan to discard the plant when it quits blooming. Give it full sun in a south window. For proper bud and foliage development, provide temperatures of 60° to 62° F. at night and 70° to 75° F. during the day. Maintain the highest humidity possible, and syringe or mist the foliage frequently. Keep uniform soil-moisture levels by all means, and be sure that drainage is adequate. Rain water is preferable to tapwater, particularly if the latter is “hard” or alkaline. Never use softened water. Water should be at room temperature or slightly above. Check often for insects — the gardenia is a favorite haven for mealybugs, spider mites, aphids, thrip, scale, etc. A slightly acid soil is essential.
Before taking your gardenia outside in the summer, shape up the plant by pruning back the main shoots to several pairs of leaves on each. This pruning causes branching, which should result in a better developed specimen.

In June, sink the pot outside in a bed of acid peat in partial shade. If root-bound, repot in a container 1 inch larger in diameter. Use 1 part standard potting soil mixture (see page 9) and 1 part acid peat. Water with ammonium sulphate and iron sulphate (½ teaspoon of each per quart of water; or 1 ounce of each per 3 gallons) at 2- to 3-week intervals. Substitute a complete soluble fertilizer for the ammonium sulphate every second or third feeding. The ammonium sulphate supplies nitrogen, the iron sulphate furnishes iron, and both aid in keeping the necessary acid condition. If you use a soil-testing kit, be sure that the acidity (pH) is 6.0 or slightly below. In mid-summer, pinch out the tips of newly formed shoots. Bring the plant indoors in September.

If your gardenia is kept inside all summer, protect it from the sun’s rays but make certain that it gets bright light. To prevent too rapid drying out of the soil, use a glazed or non-porous pot. If the plant is in an ordinary clay pot, it can be set inside a larger pot with no less than 1 inch of space between. Fill this space with peat, sphagnum, or vermiculite and keep it wet.
Gardenias are propagated from tip cuttings taken off young shoots. Start a new plant or two when the old one becomes too large. Keep two pairs of leaves on each cutting, and use rooting hormone. Four to six weeks are required for rooting. Put into 3-inch pots, and grow on as described above.

Of the various troubles you may encounter, “bud drop” is the most irritating. Proper and uniform environmental conditions are essential to minimize this difficulty — but even then, some buds will always fall. Some of the contributing factors are lack of moisture at the roots and in the air; water-logged soil; insufficient light; atmosphere too warm or too cold; and rapid temperature fluctuations. Foliage yellowing is brought on by soil that is not acid enough or by too low soil temperatures. Promptly discard any plant that has “root knots” (caused by nematodes) or is obviously diseased.

GERANIUM (Pelargonium)

Pronounced Jer-ray-nee-um; Pel-ahr-goh-nee-um

Garden or Bedding Geranium (P. hortorum). This familiar plant is also known as the Zonal or House Geranium. Geraniums remain a favorite with window gardeners because of their showiness and rather easy propagation and culture. But attention to a few simple requirements will improve the quality of the flowers and foliage.

Although geraniums are year-round bloomers, they may perform indifferently in winter if they lack light or if temperatures are too high. Relatively few geraniums are sold as gift plants, but many of them are produced for the spring market because of their usefulness for outdoor bedding or as taller subjects in planters and window boxes. A great many plants are sold around Memorial Day for grave and urn plantings in cemeteries.

Geraniums range from white through pink, salmon, scarlet, deep red, and various novelty colors. Semi-doubles and singles are most popular, although a few fully double varieties are offered. Plant stature and foliage coloration vary greatly too. The so-called “colored” or fancy-leaf geraniums are highly attractive. Many do not have quite as perfect flower heads as the conventional varieties, and they are not as well suited for garden use.

Geraniums do well outside in summer with some protection and light shade during the warmest part of the day. Plant in good friable soil, but don’t overfertilize or overwater. In late summer or before frost in the fall, make stem cuttings from the plants you want to save (see page 11).
It is seldom worth-while to dig up old plants. They have to be cut back severely, and recovery is so slow that you get few blooms for a number of months. The old method of putting geraniums in the basement over winter is definitely not recommended. The practice was to shake soil from the roots in the fall and hang the plants upside down in a cool, dark, damp basement or cave. In spring they were replanted — if still alive — and cuttings made from the new shoots. No modern gardener would think of using this antiquated procedure because the results are so poor.

Pot up rooted cuttings in small containers, and shift only when the plants start to become rootbound. Use the general-purpose mixture. Fair success can be achieved by rooting cuttings directly in small pots of sandy soil. Water cautiously, and give these cuttings the same care that you would cuttings in the rooting pan. Grow geraniums in the sunniest window you have — near the glass in winter. Without full sunlight, they get tall and stringy and have few flowers.

As the young plants develop, pinch out the tips of the branches occasionally to improve branching. Turn each week for well-formed plants, and take off old flowers as they wither. Water adequately, but carry slightly on the dry side. The preferred night temperature is about 55° F., and normal room temperatures are suitable during the day.

Do not apply fertilizer until plants are well-established after being potted up or shifted. Feed sparingly — too much nitrogen encourages lush growth and discourages flowering. A reddish coloration of the
lower leaves is an indication of nitrogen deficiency. High humidity is not quite so important for geraniums, and they profit from good ventilation. Keep water off the leaves and flowers. If one plant becomes diseased, discard it before others are infected. Watch for insects, and eradicate them when they first appear.

Fall-propagated plants will usually bloom within 3 to 5 months. When planting time arrives, set the plants outside for summer flowering. If you need more plants, take the cuttings you can spare and root them after the first of the year. By June they should be in satisfactory condition for planting out. For choice flowering plants in your living-room and kitchen windows in the fall and early winter, you may want to start cutting as early as June.

When selecting cuttings, choose those with growth that is firm and starting to mature—not soft and succulent, or quite woody. Avoid excess humidity around cuttings and too much water in the rooting medium. Either condition encourages disease. Geraniums can easily be raised from seed. But it takes a long time to get full-sized plants, and these will be a mixture, most of them inferior to named varieties.

**Lady Washington Geranium** (*P. domesticum*). This geranium is also known as the Martha Washington Pelargonium, Show Pelargonium, and simply “Pelargonium.” If any flowering plant can justly be described as gorgeous, this is it! Individual flowers (borne in clusters) are often large and attractively blotched, sometimes resembling pansies.

Keep your blooming plants in bright light, just out of the sun, with uniform but very cool temperatures and plenty of water. Unfortunately, this type of geranium is not a quality gift plant. Its petals drop quickly in the home, and the foliage is not particularly attractive in itself. In addition, it is not a perpetual bloomer like the garden geranium. Normal flowering time is in the spring, often around Easter. Plants set outside in the summer do not bloom at all in warmer areas, and should never be bought for garden use. Buds set only at temperatures below 55°F.

If you want to try reblooming this plant, here’s how to do it. Enforce a rest period after flowering by cutting down on watering. In May, sink the pot to the rim in a largely sunny bed outside and keep on the dry side all summer. Lift and prune back severely in late summer, leaving only the strongest shoots, and remove a large part of the old soil from around the roots. Repot, using the general-purpose
mixture. Water lightly at first, but syringe the tops frequently until new growth is well started. Keep in good light, and move indoors before cold weather.

Once inside, give the plant the conditions it needs or you'll have nothing but a crop of leaves. Night temperatures of 50° to 52° F. are necessary, with about 65° to 70° F. as a day-time maximum. Full sun is equally necessary, although light shade on the brightest days in spring is advisable. Avoid overwatering, and do little if any fertilizing until growth picks up in early spring. Pinch out the tips of the new shoots to promote bushiness, but discontinue after the first of the year. If roots become crowded in the pot, shift in early January.

Rather than carry over the old plant, it is better to start new plants from cuttings. These cuttings can be taken either immediately after flowering or in late summer from new shoots that form after the plant has been pruned back. Grow these young plants outside until frost is near. Shift as necessary; otherwise, handle according to the steps outlined above.

GLOXINIA *(Sinningia speciosa)*

Pronounced Glok-sin-ee-uh; Sin-nin-jee-uh

A relatively small number of greenhouse-grown flowering pot plants make satisfactory house plants — but here is one that anyone can grow successfully. In many ways, its culture is similar to that for African violets (actually a member of the same family), and the tubers are handled much as those of tuberous-begonias. The mound of large, velvety leaves forms a perfect foil for the startlingly magnificent trumpet-shaped blooms. Each flower may be as large as 5 inches or more in diameter. Gloxinias have become so popular that florists now produce them for sale in all seasons.

The vivid colors found in gloxinias include pinks, reds, purples, blues, and whites. Some are solid-colored; others are bordered, spotted, ruffled, etc. A well-grown specimen will always be a conversation piece. Gloxinias are at their best in spring and summer, and often bloom for weeks. Never plant them in the garden. Keep indoors or on a protected porch or breezeway in summer.

Blooming gloxinias need quite warm temperatures (65° to 70° F. at night, somewhat warmer during the day), a moist atmosphere, and good ventilation. Below 60° F. at night, growth is nil. Gloxinias can stand more light than African violets; but from late spring on, they need some shading or filtering of direct midday sun to prevent burn-
ing. Try them under fluorescent lights. Thin, spindly, or leggy growth occurs in too dim light. See that drainage is satisfactory. Moist but not water-logged soil is desirable. As with African violets, keep water off foliage and out of the crowns. Leaf-spotting, caused by cold water, does occur on gloxinia foliage, but not as readily as on African violets. For thrifty growth, fertilize at regular intervals.

Most types of gloxinias should gradually be allowed to go dormant after they have flowered by tapering off on watering. When foliage has died down, take the pot to a cool room (about 50°F., but no lower) for storage. Don’t water. A 6- to 10-week rest period is usually adequate. If new top growth starts sooner, repot and let the plant develop.

The usual practice is to allow the plants to go dormant in late summer, then store the pots cool until January or February. At that
time, remove the tubers from the soil and start into growth in moist vermiculite or a sand-peat mixture as recommended for tuberous-begonias. Handle newly purchased tubers in the same way. Temperature for starting tubers should be 70° to 75° F. When top and root development is well started, pot up singly in 4- to 5-inch pots. Plant tubers very shallowly. Allow only several of the stronger top-shoots to grow on each. Shift to larger pots as needed.

Azalea pots (somewhat shallower than standard pots) are well suited for gloxinias. Recommended potting mixture: 2 parts soil; 1 part peatmoss or leafmold; 1 part well-rotted manure; and 1 part sand. Water sparingly at first, then more heavily as growth increases. Plants will bloom in about 4 months. Always allow plenty of space for well-formed plants. Bud "blasting" results from unfavorable conditions — improper watering, dry air, rapid temperature changes, insect injury or disease.

Unless diseased or neglected, your old tubers will stay in good condition for a number of years. New plants can be propagated from leaf-cuttings, or by rooting several of the shoots on the newly started tubers. Gloxinia seed, sown in winter or spring, will give blooming-sized plants in 6 to 8 months, but it's better to use cuttings or buy new tubers if you want more plants. It's not easy to grow gloxinias from seed under home conditions; moreover, seed strains do not come entirely true to type.

HYDRANGEA (H. macrophylla)

Pronounced Hye-drayn-jeuh

The giant-flowered hydrangea has become a traditional plant for Easter and Mother's Day. Many people keep hydrangeas with the hope of reflowering them the following spring. It isn't impossible to rebloom hydrangeas, but you shouldn't set your expectations too high.

Don't neglect watering your hydrangea — dry soil hastens flower deterioration. Reduced temperatures and high humidity also increase bloom life. Move the plant to a much cooler place at night. Bright light will help keep it in good condition. Somewhere not too far from a sunny window is best. In warmer areas the hydrangea is hardy, and when its flowers have died, it can be planted out in the border as a permanent shrub.

To carry your hydrangea over for reblooming indoors, carefully follow these directions. Cut shoots back to several inches above the
soil, or leave 2 to 3 nodes on each shoot. Repot, using this mixture: 3 parts soil; 3 parts acid peat; and 1 part sand. When re-established, grow on in full sun. In May, sink the pot outside in a flower bed receiving dappled shade during the warmer part of the day. Mulch, water regularly, and start fertilizing. For extra-large flower heads, limit the number of stems per plant to two or three.

Leave outside until frost is near, then lift the pot and bring it inside to a cool, sunny room (50° to 60° F.) or a sun porch that can be maintained above freezing. It is desirable to keep the foliage on until November 1, but at that time pick off all of the leaves. Defoliation can also be accomplished by putting the plant in total darkness until the leaves drop off naturally. The leafless plant must then be subjected to cool temperatures (50° F. or less, preferably 35° to 40° F.) for six weeks. Buds develop during this cool period; without it, flower buds
usually blast. Keep the soil somewhat drier than usual, but not so dry that the stems shrivel.

Following this treatment, the plant can be brought into a fairly cool (55° to 60° F.), bright room until leaves appear. Water more freely. Then shift to a sunny window and warmer temperatures (60° F. at night, 10 to 15 degrees warmer during the day). Check soil moisture daily, and fertilize regularly.

The spectacular bloom-clusters of hydrangeas are usually pink or lavender-blue, although some whites are grown too. The colored varieties will be blue if grown in quite acid soil. Incorporation of considerable acid peat in the soil helps promote acidity. To be sure of getting blue flowers, water the plant at 10-day intervals in late summer (3 applications) with aluminum sulphate (7 teaspoons per quart of water, or 3 ounces per gallon). After cold storage, give 3 or 4 similar applications. Be sure that the soil is moist before you apply aluminum sulphate. The soil pH should not go below 4.0; degree of acidity can be determined only by soil tests.

Your fertilizing program is governed by the color of flowers you want. For blue, use fertilizers that contain no phosphorus. We recommend potassium nitrate (rounded ½ teaspoon per quart of water, or 1 ounce to 2 gallons) at 2-week intervals in the summer, and at 3-week intervals during the fall and in the forcing period in early spring. Do not fertilize during cold storage.

If you want pink flowers, hold the pH near neutral (6.5 to 7.0). Adding 1 teaspoon of superphosphate to each pot also promotes pinkness. If your soil is naturally acid, it can be made more alkaline by watering, as needed, with diluted lime water (⅝ teaspoon of hydrated lime per quart of water, or ½ ounce to 3 gallons). In addition, use a complete liquid fertilizer, and apply at the intervals given for potassium nitrate. If iron chlorosis (foliage yellowing) is troublesome, apply chelated iron or iron sulphate, but only often enough to clear up the symptoms. Dilute chelated iron as directed on the package; add ¼ teaspoon of iron sulphate to 1 quart of water or 1 ounce to 2 gallons.

By severely pruning your hydrangea each year, you can keep the plant at a reasonable size and flower it successfully for several seasons. Repot or shift as necessary. Cuttings taken in early spring can also be grown into blooming-sized plants by the following spring. When rooted, pot up and shift into larger containers as needed. Pinch back the shoots twice to promote branching and prevent tall, ungainly growth. The last pinch should be no later than July.
JERUSALEM CHERRY (*Solanum pseudocapsicum clevelandi*)

Pronounced Sol-lay-num

The colorful Jerusalem cherry is one of the less expensive florist pot plants. When purchased, it is covered with small, round, brilliant-red fruit. Give bright light and hold as cool as possible (45° to 50° F. at night) for extended display. Keep the soil uniformly moist. Leaves and fruit drop rather quickly if the plant wilts or if gas is in the air. The fruits are supposedly poisonous.

This plant is seldom worth growing on a second year. It often blooms poorly and becomes large and ungainly. If you do decide to rebloom your Jerusalem cherry, keep it growing actively and set it outside when the soil is warm. Choose a fairly sunny location. Either set the pot down in the soil, or knock out of the pot and plant directly. Prune the plant back severely and reshape at this time. Feed cautiously — excess nitrogen causes rank growth and poor fruiting.

The cherry-like fruits form during late summer from small white flowers that are not very attractive in themselves. Bring the plant inside in the fall, and place in a cool but sunny window in an unheated sun porch or bedroom. Temperatures should not go down to freezing or above about 55° F. at night.
A more satisfactory method is to collect ripe pods from your original plant, remove the seed, dry it, and store. Sow in spring, and grow the seedlings in pots of low-nitrogen soil or non-fertile soil outside. Lift and bring indoors in early September and grow as cool as possible. Pinching out the shoot tips once or twice when the young plants are developing will give better branched specimens.

KALANCHOE (K. blossfeldiana)

Pronounced Kal-an-koh-ee

Although the kalanchoe is an attractive, compact plant with clusters of small, usually scarlet-red flowers, it is not familiar to many people. The kalanchoe is ordinarily available for the winter and spring holidays, but new methods allow your florist to bring it into bloom at any season of the year. Follow the general instructions for the care of gift plants.

With reasonable attention, your kalanchoe can be kept for another season of bloom. Shift to a larger-sized pot when rootbound. The general-purpose potting mixture will do. Fertilize at monthly intervals, and give plenty of water. Florists use a night temperature of 60° F. and a day temperature between 70° and 75° F. Sink the pot outside during the summer. Pinch out shoot-tips in mid-summer for compact plant development. Keep in full sunlight except for the hottest summer months when partial shade is advisable.
In general, better plants can be obtained from cuttings or seed than by carrying over your old plant. Cuttings root easily. Those taken in spring make sizable plants for the following winter. Although more vigorous plants result from seeds, young seedlings are not the easiest subjects to nurse through the adolescent stages. Seeds may be sown from December to as late as July. Germination becomes a problem in the warmer months, however, and early sowings give larger plants. Grow your seedlings according to the cultural directions given earlier. Since the kalanchoe forms its buds during short days, it normally blooms in early spring. Be careful of light on your plants after dark (see Chrysanthemum).

DDT may seriously injure or kill kalanchoes and should be avoided. The mealybug is one of the worst pests on this plant.

POINSETTIA (Euphorbia pulcherrima)

Pronounced Poin-set-ee-uh; Yew-forb-ee-uh

The poinsettia, native to Mexico, is the traditional Christmas plant. It is usually purchased in its full glory, and its cost is largely determined by the number of blooms present. Red-flowered forms are most popular, but whites and pinks as well as semi-doubles are also available. The showy colored structures we call flowers are actually bracts. The flowers are the yellow parts tucked down in the center of each whorl of bracts.

Few holiday pot plants are more striking than the poinsettia, but it must be handled with great care if it is to remain presentable for any length of time. Strive for uniform temperatures in the 60° to 75° F. range, and always reduce the thermostat setting at night. Put your poinsettia in a place where it gets bright light (but not direct sun), and where the air is not too dry. Take it out of the window at night if there is danger of chilling. Maintain soil moisture at moderate and uniform levels — neither soggy-wet nor bone-dry.

Poinsettias are very sensitive plants. Drafts, too cool or too warm temperatures, sudden temperature changes, dry atmosphere, improper watering, dim light, etc., can cause loss of leaves and withering of bracts.

The poinsettia is one of the most difficult gift plants to rebloom successfully, but it is probably the one most often attempted. Unless you are willing to gamble when the odds are stacked against you, it’s better not to tackle the poinsettia. Your florist will gladly explain the problems involved. Remember too — the poinsettia blooms only once a year.
After your poinsettia has bloomed, gradually withhold water. The leaves soon turn yellow and fall. Remove any foliage plants (such as ferns, silk oak, or asparagus) that may have been growing in the pot. These are sometimes used to hide the barren lower stems of the poinsettia. Store the dried-off plant in a cool (50° to 60° F.), dry, dark basement room until April or May. During this period, water lightly — just enough to keep the roots and stems from drying out excessively.

When the plants are brought up, prune back the stems to about 6 inches. It's a good idea to repot at this time, removing some of the old soil from the roots. Repot in a mixture that drains well and contains considerable organic matter (like the mixture recommended on page 9). Use a pot that just holds the root-mass without too much crowding. Water well, and place in a warm, sunny location for renewed growth. Most gardeners prefer to sink the pot in a protected,
sunny, outside flower bed in May or June. Light shade a few hours of the day is all right. Lift occasionally to prevent growth of roots down into the soil outside the pot. Shift to larger pots as plants become root-bound, but avoid unnecessary damage or disturbance to the root systems.

Keep the plant growing actively all summer by regular waterings, and feed with a complete soluble fertilizer. Pinch back the new shoots in early August, allowing only a few of the stronger ones to develop. Although few insects bother the poinsettia, keep your eyes open for mealybugs and scale. Try not to get sprays on the bracts. A diseased plant can seldom be cured and should be discarded.

Before cool fall weather, take the plant inside to a choice location in a south window where it gets all possible light. Try not to neglect your poinsettia, and work toward as uniform growing conditions as possible. Night temperatures should be no higher than 60° to 62° F.; if above 65° F., poor flowers may result. Day temperatures should be 10 to 15 degrees warmer than at night. With luck, your plant should bloom by early or midwinter.

The poinsettia is known as a true short-day (or long-night) plant, so make certain it receives no light from a lamp, light fixture, street light, or even a flashlight after dark. Even very short periods of lighting at night may be enough to prevent or interfere with flowering. If the plant is to be grown in a room that is lighted nightly, cover it completely at dusk every day with a heavy paper bag, a piece of opaque black cloth, or other light-tight cover. Remove at about 8 o'clock each morning.

If you have a knack for getting cuttings to root, you may get somewhat better results by starting new plants from the shoots that appear on your old cut-back plant in spring.

PRIMROSES (Primula)

Pronounced Prim-rose; Prim-yew-luh

Your florist commonly sells several species of primroses. These include *P. malacoides*, which has rather small flowers and leaves, and *P. obconica* and *sinensis*, both somewhat larger-flowered types. Primroses are comparatively inexpensive to buy and are available in several bright colors. They are sold from Christmas through the spring months. Select well-flowered specimens with a profusion of buds. Although primroses are actually perennials, they seldom rebloom satisfactorily and should be discarded.
It is best to put primroses where the light is good but temperatures low. For the longest possible enjoyment of these plants, the temperature should be 50° F. at night and no higher than 65° F. during the day. Primroses require considerable water, and flower heads are damaged by wilting. Avoid letting water stand around the crowns.

Obconica sometimes causes a skin rash, and susceptible persons will do well to give this plant a wide berth.

Propagation is by seed, but it is better to buy plants than start your own. The seed is very fine. The seedlings are fragile, and it is difficult to bring them through the summer season in good condition. If you still want to try growing primroses from seed, sow the seeds in early spring. Keep the plants indoors or on a protected porch with some shading in the brighter months. Primroses cannot tolerate an acid soil, and if you use the general-purpose potting mixture, substitute some other form of organic matter for at least a portion of the acid peat.
ROSE (*Rosa*)

Pronounced *Roh-zuh*

Potted roses make unusual gift plants for Easter, Mother’s Day, and Memorial Day. Among the types used for forcing are the floribundas, polyantha or baby ramblers, hybrid teas, hybrid perpetuals, and climbers. These are all hardy forms, and should be planted in the garden in a permanent location after flowering. Here they will usually bloom later the same season and for years to come. Miniature roses are also sometimes offered; lift these and grow indoors over winter.

In the home, potted roses demand high light intensity, although direct sun coupled with a hot, dry atmosphere will wilt the flowers fast. Reduce the room temperature at night to 58° to 60° F. Give roses plenty of water, and never let them wilt. Remove old flowers, and be on the lookout for spider mites, mildew, and “black-spot.” All-purpose rose dusts and sprays effectively control both insects and foliar diseases. Roses are heavy feeders, so fertilize regularly, both indoors and out. Plant out when weather permits in deeply prepared, rich, well-drained soil with a sunny exposure. Use plenty of organic matter. Don’t forget to mound up soil around the plant in late fall to prevent winterkilling. Rose fanciers like a heavy mulch, both in winter and summer. Attempts to pot up and reflower rose plants in the house will almost invariably be disappointing.

SAINTPAULIA OR AFRICAN VIOLET (*S. ionantha*)

Pronounced *Saynt-pawl-ee-uh*

Few house plants have achieved as much popularity as the Saintpaulia. Even so, African violets are rather unpredictable, somewhat exacting in their requirements, and offer the window gardener a real challenge. They are available year-round in a pleasing array of colors, ranging from white through pink, blue, lavender, and deep violet. Many different foliage forms add interest too.

When bringing African violets home or taking them outside for delivery in cold weather, wrap extremely well. Better still, put them in a tight, insulated box to prevent chilling. Even if carefully tended, it is not uncommon for African violets to “sulk” until acclimated to their new environment. But when situated in a location they like, they bloom almost continuously. Every home has a window that will grow excellent African violets. Try to find this *right* spot immediately—but if your plants don’t respond favorably in a few weeks, try another location. Once they seem “happy,” disturb as little as possible.
From the first, subject them to proper temperatures—65° to 75° F. at night and about 10 degrees higher in the daytime. Night temperatures below 60° F. are undesirable. Proper light is also extremely important. Although African violets need good light, direct sun should be avoided except in deep winter. In summer, a north window is suitable, especially if not shaded by a porch or tree. As fall approaches, move to a brighter window. Too much light burns leaves and flowers, and the plant appears very compact, with abnormally light-colored foliage. When the plant is in very dim light, there may be lush growth and long leaf-stems but no flowers. Use the nature of growth as a guide in finding the proper location for your African violets. Turn the plants occasionally for symmetrical development.

Wonderful specimens can be grown under fluorescent lights. Use a 2-tube, 40-watt fixture with reflector, and suspend no higher than 1 foot above the plants. Light plants for 18 hours a day. If temperatures are correct, fluorescent lighting can be used in the basement or other areas where there is little or no natural lighting.

Apply lukewarm water only. When cold water touches the leaves, it usually causes leafspot—especially when plants are in the sun. Rather than top-watering, many home gardeners prefer to set the pot in a saucer of water. When you use this method, occasionally apply water from above to wash down accumulated soluble salts. Check soil moisture daily, aiming at moderate but uniform levels. Some experts believe that the soil should be kept on the dry side. At any rate, avoid overwatering or under watering—either will interfere with flowering. Keep the humidity up.

African violets need a light potting soil that drains well. Use the general-purpose mixture described on page 9, reducing the amount of soil to 2 parts instead of 3. Apply a soluble complete fertilizer at intervals of several weeks. Modify the frequency and strength of applications as indicated by the plant’s progress. Overfertilization quickly leads to failure.

Shift to a larger container only when the roots become matted around the sides of the soil ball. It’s best to divide the old plant into single-crown divisions when it becomes too large or crowded. Propagation is also by leaf-cuttings, but this method takes much longer to produce blooming-sized plants. African violet seed does not “come true.”

Clean your plant by cautiously syringing with lukewarm water every 3 to 4 weeks. Dust and debris can be removed from the hairy leaves with a camel’s hair brush, but brush gently. Gas in the atmos-
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phere is said to be very bad for African violets. If the plants are in clay pots, cover the rim with tinfoil or scotch tape to protect the petioles (leaf-stems) from soluble salt injury or damage from the rough edges.

For more complete cultural directions, read Circular 695, "African Violets in the Home." You may obtain Circular 695, as well as the other circulars mentioned in this publication, from your farm or home adviser, or by writing to 110 Mumford Hall, University of Illinois, Urbana.

SCHIZANTHUS OR BUTTERFLY FLOWER

Pronounced Skye-zanth-us

The schizanthus, native to Chile, is now grown so infrequently that it’s almost a “stranger” in florist shops. Late winter or spring is the season for it. Another common name for the schizanthus is the “poor man’s orchid.” There’s no denying that it’s a flashy plant with its myriads of attractively patterned flowers and lacy foliage. Try cutting a few sprigs for table arrangements or bouquets. They last well in water.

Your florist grows schizanthus as a cool-house crop, and you should give it as similar conditions as possible. The temperature at night should be about 50° F., and daytime temperatures should range between 60° and 70° F. With such a mound of flowers and leaves, it is necessary to check on watering every morning. So that all buds have a chance to open, keep the plant growing normally in bright light but not direct sun. High humidity helps too.

The schizanthus is an annual grown from seed. It blooms only once, so discard your plant after the flowers have withered. Blooming plants are inexpensive in season, and it’s scarcely worth the trouble trying to raise your own.
But if you want to try your hand at it, gather seed from your dried-off plant, or buy seed of semi-dwarf strains. Sow the seed in the fall. The potted seedlings are grown on under cool, sunny conditions. Take indoors as frost approaches. Grow singly in pots and shift only as necessary. Too large a pot may hinder flowering.

When the young plants are several inches tall, pinch out the tips to promote branching. Turn at regular intervals so that well-shaped plants develop. Feed with soluble complete fertilizer at biweekly intervals. Watch soil moisture carefully, and always have good drainage.

**SPRING BULBS (HARDY TYPES)**

Of the hardy spring-flowering bulbs that can be forced in pots, tulips, hyacinths, and narcissi (including the so-called daffodils) are most popular as holiday gift plants. Other bulbs frequently handled in the same way include crocuses, grape hyacinths, and squills. The general instructions for the care of gift plants outlined earlier in this circular should be followed in caring for these plants.

It is futile to attempt reblooming forced-out bulbs. They are good only for planting outdoors, and even then, don't expect flowers for several seasons. Everything considered, it is probably best to discard them.

If you wish to set out spring bulbs, follow these simple instructions. Cut off the stems when flowers are gone, but continue watering. Always leave all the foliage on. Keep in full sun and give a soluble complete fertilizer every 3 to 4 weeks. In late spring, gradually cut down on watering and stop feeding as the foliage begins to mature (yellow) naturally. When dried off, remove bulbs from the soil and store in dry peatmoss in a cool, dry basement room. Plant out in a sunny, adequately drained bed in early fall.

Bulbs such as paper-white narcissi and hyacinths that have been forced into bloom in pebbles and water should be discarded. They are completely exhausted. Furthermore, the paper-whites are not hardy in most areas.

It's great fun forcing your own spring bulbs, and you can do it with reasonable chance of success. For this purpose, buy fresh, plump, top-size bulbs. For more complete information on the forcing of spring bulbs, write to 100 Floriculture Building, Urbana, Illinois.

All other photographs by the author.