The Selection, Care, and Use of Plants in the Home

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The Selection, Care, and Use of Plants in the Home

Introduction

The use of plants indoors has greatly increased in recent years. Public awareness of the environment has encouraged the trend, yet today's interior horticulture is but a continuation of an ancient practice. Growing plants in containers for their beauty has been a long-established cultural aspect of civilization.

Contemporary use of plants ranges from extensive plantings in urban shopping areas to commercial and public building interiors, modern houses and apartments with large expanses of glass, and older houses or apartments. Plants and flowers bring nature's beauty indoors, but careful selection and placement are required to make them successful additions to the decor. A well-arranged display of cut flowers can add effective color and fragrance for a limited time. Potted flowering plants also offer color and with extra care can be longer lasting than cut blooms. The more easily maintained foliage plants have become especially popular lately for providing continuous decoration in the home or office.

Foliage plants are those plants grown primarily for their leaves rather than their flowers. Most of the typical foliage plants used today, such as the philodendrons, dracaenas, scheffleras, monstera, and figs do not bloom with indoor culture. It is their foliage that is attractive and enjoyed all year; and often these plants are more easily cared for than most flowering plants. In many situations, foliage types are preferred to the seasonal flowering plants such as geraniums, azaleas, begonias, and Christmas cacti. People often have a collection of tropical foliage plants to provide color and interest year round, occasionally purchasing a container-grown flowering plant to add flower color.

As the Greek and Romans demonstrated centuries ago, plants grown in containers are more useful than those grown in the ground. They are portable and easily moved indoors where they can be observed more closely. This practice adds to the daily enjoyment of life and increases the beauty of the interior. A carefully selected, well-located, and well-cared-for plant is an important item in any decor. Widespread apartment living has encouraged the use of interior plants since places for outdoor gardening are rarely provided. Also, growing plants indoors makes the long dormant season of the northeast much more tolerable.

Because indoor plants are out of their natural habitats and are confined in containers, optimum growth is difficult. The interior gardener becomes responsible for providing all of the plant's requirements in this artificial situation. There is no such thing as a green thumb; this is a most unfortunate belief. Those individuals who are able to grow a range of plants are aware that plants are living entities, have learned why plants grow, and have carefully provided the basic requirements.
Growth Requirements

Basic needs must be met in order for plants to grow. Green plants manufacture their own supply of energy necessary for growth; but suitable light, adequate water, a supply of nutrients, and a favorable temperature are the essential factors for this process.

Know the Light Intensity to Select Plants

Correct light is one of the essential requirements for plant life processes. The most important factor in selecting plants for interior use is to first determine the light intensity exactly at the location where the plant will be grown, then choose a plant known to be suitable for the type of light.

Within houses, apartments, offices, and other buildings three types of natural light intensities generally occur: direct light (high light intensity), indirect bright light (medium light intensity), and low light.

Window direction is not the only consideration for the amount of light available within an interior. Light colored walls, mirrors, and high ceilings will increase the interior light. Outside trees, a porch, roof overhangs, or adjacent buildings can reduce the amount of light within a room. Consider these aspects when determining natural light for selection of plants. Common symptoms occur when plants are exposed to the wrong light intensity. If the natural light is too intense for plants, wilting of leaves occurs. With continuous exposure the leaves will begin to yellow and dry areas will develop on the foliage. Where there is too little light older leaves will drop and new growth will be weak with small leaves. Lack of adequate light is the most frequent problem with indoor plants.

Use of Artificial Light

Artificial light can be provided to supplement natural light to maintain plant growth. In the photosynthetic process various wavelengths of light are used and these specific qualities of light are available from either natural or artificial sources. Incandescent or fluorescent lamps may be used and numerous fixtures specifically designed for growing plants are available. High wattage (150 PAR-38) incandescent light directly over foliage plants at a distance of four feet provides adequate intensity and prevents damage. Fluorescent light can be located close to the plant to provide high light intensity, and since it is a cooler source, heat damage does not occur. The correct wattage of fluorescent light provides enough light intensity to promote growth and flow-
ering of many popular plants. A typical installation requires two 40-watt fluorescent tubes 12 inches above the plants for minimum light needs. A four-tube fixture approximately doubles the light intensity and produces more desirable flowers.

Temperature

A favorable temperature for interior plants is a daytime range of 65°F to 70°F and a night temperature of from 60°F to 65°F. The low night temperatures will help prolong the duration of bloom on flowering plants. However, an ideal temperature range for most foliage plants and flowering plants of tropical origin, such as gesneriads, is about 70°F during the day and only slightly lower at night. A thermometer should be used to determine the temperature where the plants are to be located. During the summer months plants located in direct light may need to be moved or shaded at midday to avoid extreme heat and injury from the sunshine. Often people move plants outdoors for the summer. This should not be done until the outdoor night temperatures are regularly above 60°F. To avoid injury the plants must be brought indoors, generally in late August, before the outdoor night temperatures are lower than 60°F.

During the winter, locations near windows are usually cooler than elsewhere in the room so a plant next to a window is in the colder part of the room, especially where there are no storm windows or thermopane panels. Paper or a sheet of plastic, or other protection, between the plants and the glass can prevent injury at night. Plants may even need to be moved away from windows on extremely cold nights.

Humidity

Plants grow best in a humid atmosphere, but most houses are dry (have a low humidity) because of winter heating and summer air conditioning. The drier the air, the greater the loss of water from the plants. Interior humidity can be increased in several ways:

- install supplemental humidifiers in the heating system or use room humidifiers near the plants
- set the plants above a tray of gravel, coarse sand, or perlite that is kept wet
- group plants together; air surrounding a group of plants usually is more humid than the air around a single plant
- avoid a location where excessive air movements will cause rapid water loss from plant surfaces
- locate plants where the humidity is the highest, such as the bathroom or the kitchen, especially above the sink
- keep plants adequately watered; with a correct supply of water methods of increasing humidity may not be required

Watering Practices

For most plants keep the growing medium moist at all times, but avoid excess wetness. An exact schedule of watering is not practical because of variations in room temperature, light, and humidity. Apply water when the surface of the medium begins to feel dry. Never allow the foliage to wilt between applications. Plants can be watered from either the top or the bottom. Neither way is best. The most important aspect is to thoroughly saturate the growing
medium each time water is applied. Insufficient watering restricts new growth, causes leaf drop, especially of the oldest foliage, and also causes leaf tips or margins to turn brown.

When surface watering, use enough so that excess water runs out of the bottom of the container. This method requires a well-drained growing medium because excess water around the crown or lower stems of the plant will promote disease. The correct amount of horticultural grade perlite (or coarse sand) and peat moss in the potting mixture for providing good drainage are found on page 6.

Bottom watering distributes moisture uniformly through the soil and prevents excess water collecting at the base of the plant. Set pots with bottom drainage holes in water-filled pans or deep saucers. Capillary action moves water uniformly up through the medium until it reaches the surface. Excess water left in the pans should be removed within an hour or as soon as the soil surface feels moist. A common error is to keep the saucer continuously filled with water. This causes the lower half of the growing medium to remain excessively moist and may cause injury to the root system.

A disadvantage of bottom watering is that with capillary action chemicals in the medium move up to the surface with the water and eventually accumulate on the rim of the container or the surface of the medium. These excess chemicals may become concentrated in sufficient quantity to become toxic if the plants surfaces come in contact with them. A good procedure is to occasionally top water, which will dissolve the chemicals and bring them back down into and through the medium areas.

Drinking water is generally safe for plants because the amount of chlorine in city water is not sufficient to injure plants. Water softeners using sodium can have an adverse effect because sodium is an element that accumulates in the growing medium and eventually becomes toxic. Use of untreated water before it enters the softening system is recommended as is use of rain water, melted snow, water from dehumidifiers, or the water obtained from defrosting the refrigerator.

It has been reported that fluoride concentrations greater than 0.25 percent have caused injury in some foliage plants, especially members of the lily family. In areas where municipalities have fluorinated water it may be wise to use untreated water.

Containers and Watering

The container in which a plant is grown will determine the frequency of watering. The two best containers for plant culture are the regular greenhouse clay pot and the hard plastic pot. Both have bottom drainage holes for removal of excess water. The main difference is that clay pots are porous and the water in the soil mixture evaporates not only at the surface but also through the sides of the pot. Plants in clay pots need more frequent watering, but over-watering is less likely. Clay pots may become unattractive because the continued evaporation of moisture causes salts to accumulate on the outside of the container.

Plastic pots, being nonporous, do not lose moisture through the sides of the pot and plants growing in them will require less watering. The plastic containers will remain attractive and are available in a wide range of colors.

Both the clay and plastic containers are made as standard pots, azalea pots, and as bulb pans. Each type is available in diameters that increase by one-inch intervals. The standard pot has a height equal to its diameter and is suitable for most foliage and flowering plants. It offers the greatest space available for the growing medium and the root system of plants. The second type of container is commonly known as an azalea pot. Its height is three-fourths of its diameter and is used for shallow rooted plants, such as the azalea. A third type has a height equal to one-half of its diameter. It was developed for forcing bulbs and is called a bulb pan. This type of container has sufficient depth to anchor bulbs for growth, yet holds a minimum of growing medium to avoid excess moisture. The pan is also an ideal container for rooting cuttings.

Other Containers

Plants can be grown in other types of containers, but those without bottom drainage holes must be watered very carefully. Excess water will collect at the base of the pot, reduce aeration of the soil, and quickly damage the plant. Because no moisture can escape through the sides or bottom of the typical glazed ceramic pots, plants require less watering. The best procedure to avoid overwatering is to place a one- to two-inch layer of coarse sand or gravel in the bottom of these containers. It may occasionally be necessary to lay the pot on its side to drain excess water away. Many dish and planter gardens, as well as individual plants, are grown in the jardinier type containers.

A plant may be grown in a porous clay pot set in a jardinier. This arrangement combines the good drainage aspects of the clay pot with the attractiveness of a selected jardinier. Use a jardinier large enough to add one or two inches of gravel for the pot to sit on so that any excess water will flush into this area. The space between the two containers may be filled with moist peat or sphagnum moss to slow the drying of the growing medium. A wick-watering container provides a way for watering plants automatically. In this system, water is placed in a separate pan or reservoir beneath the pot from which a fiberglass wick placed through the drainage hole draws the water into the soil by capill
The best containers are the traditional clay and plastic pots that have bottom drainage holes. They are available in standard, azalea, and pan shapes.

In addition to the clay and plastic pots, multiple plant and wick-watering containers are available. Saintpaulias are especially suited to wick-watering. Here the pot is tipped to show the wick in contact with the water.

A clay pot is more attractive placed in a jardiniere.
lary action. The soil is kept moist, neither excessively wet nor dry. No drainage material is used in the bottom of the pot because it would prevent contact of the wick with the soil. An advantage of wick-watering is that with a large reservoir, the plants do not have to be tended more than once a week or longer. It is necessary to fill the reservoir when the water gets too low to maintain capillarity. In addition to being an effective way to reduce maintenance this kind of container is especially beneficial for plants requiring frequent watering, such as African violets and most ferns. An occasional surface application of water will prevent chemical accumulation, as described in capillary watering.

Another type of container is the multiple plant container. This is an attractive way to display plants and a space saver, because several plants can be grown in one container. It also reduces maintenance time since all of the plants are watered and fertilized at one time. However, the container needs to be rotated very often to maintain equal growth of the plants and replacing one will disturb the roots of others. The plants combined should have similar growth requirements.

**Nutrients and Fertilizing Practices**

To understand nutrient requirements and the use of fertilizers, one needs to know that green plants manufacture their own food by photosynthesis. This unique process of the plant kingdom occurs in leaves and tissues containing chlorophyll. Here, water and carbon dioxide are combined to begin the process. Light provides the source of energy for a chemical reaction where sugars and starches are synthesized. These carbohydrates are then combined with basic chemical elements to produce protein, fats, and oils. These manufactured materials become the source of energy for all plant functions: growth processes such as formation of roots, stems, leaves, flowers, and seeds. Carbohydrates are also stored for future energy needs.

A complete fertilizer is the most reliable way to supply the required chemical elements, the nutrients for this manufacturing process. A complete fertilizer contains nitrogen, phosphorus, and potassium — the three elements used by plants in the greatest quantity and those that are most frequently deficient in a growing medium. Fertilizer manufacturers are required to label the content of those primary nutrients on each container. A fertilizer with a ratio of numbers such as 20-20-20 is suitable for most plants.

Two months after purchasing a plant, begin a regular fertilizer application by mixing a level tablespoon of the above grade fertilizer in a gallon of water. Always use surface application when using fertilizer solutions and do not apply to a dry growing medium. Water the plant generously with this solution every eight or ten weeks. While in flower, newly purchased plants will not require fertilizer. If the plant is retained for growth after bloom, fertilizer should be regularly applied.

Numerous special fertilizers in pill, stick, powder, or liquid forms are available for house plants. They are satisfactory if they have a complete nutrient content and are used according to the manufacturer's directions. Overfertilization can damage plant roots severely.

Practically everyone who grows plants has heard of unusual methods for fertilizing them. Maybe some systems have a beneficial effect but they usually give only a partial treatment and may even be harmful.

**Potting Mixture**

An ideal medium for growing plants in containers is made from equal parts (by volume) of coarse sand or horticultural grade perlite, garden loam, and peat moss. A mixture of these three ingredients will provide for drainage of excess water, yet good moisture retention and aeration for root activity. Using garden soil alone is not advisable. Clay soils pack and prevent good drainage and aeration. Sandy soils lose water before plant roots can make use of it.

Use of sterilized soil mixes is recommended so they will be weed, insect, and disease free. Unfortunately it is not practical for the home gardener to sterilize soil using heat or chemicals. Small quantities of sterilized soil may be purchased
from greenhouses, nurseries, and garden stores.

Currently several prepared soil mixes are available in convenient packages. These mixes are usually already sterilized. Their nutrient content is quite variable and the serious gardener would do well to have soil analysis made before planting.

In addition several soilless mixtures combining peat moss and vermiculite or perlite and other lightweight ingredients, along with the necessary amounts of fertilizer for initial potting and growing, have been formulated and are on the market. These peat-lite mixes are generally considered sterile.

The Cornell Peat-lite Mix A is suggested for use in growing plants in the home. A small quantity can be simply made. The basic ingredients are vermiculite #2 size, sold as Terralite, and sphagnum peat moss. To make a one-peck mix, combine the following:

- Vermiculite #2 size ...... 4 quarts
- Shredded sphagnum peat moss ............ 4 quarts
- Limestone (preferably dolomitic) .... 1 level tablespoon
- Superphosphate (20%) ........ 2 level teaspoons
- 10-10-10 ........ 1 level tablespoon

Mixing will be less dusty if the peat moss is slightly moistened. Mix the materials thoroughly and use immediately or store moist in a plastic bag. This medium is ideal for interior plants and those grown in containers outdoors during summer months. The fertilizer added at mixing will be sufficient for three weeks of use. For continued growth of plants with this medium fertilize with one level tablespoon of 20-20-20 per gallon of water every four weeks. This is especially important from April through October when plants are actively growing. A similar mixture may be purchased under such trade names as Jiff-mix, Pro-mix, Redi-Earth, and others.

**General Maintenance**

In addition to basic cultural requirements, several general practices will improve the appearance and prolong the lives of plants in the home.

A more uniform shape can be encouraged by occasionally turning a plant to expose all sides to the light source. The frequency of rotating a plant will depend upon its rate of growth and intensity of the light. In time, a plant may outgrow its useful size, and a sharp knife or pruning shears should be used to cut it back to a desired size or form. Plants can be pruned just above a node on the stems or canes to be shortened. Pruning also will keep the faster growing plants in a more compact shape.

It is a good practice to wash the leaves of plants regularly to remove dust accumulations. Sometimes this will produce surprising improvements in the growth and vigor of plants. Do not shine leaf surfaces with any substances other than those sold for this practice.

Always remove discolored foliage; yellowing or dead leaves

*Pothos, Epipremnum aureum,* like most foliage plants, grows best in indirect bright light. Plants located on end tables will use the light from the lamp above.

*Dieffenbachia maculata* is well adapted for decorative use in low light areas of contemporary interiors.
are unattractive. Faded blooms also detract from the appearance of a plant and should be removed unless seed set is desired.

Avoid exposing plants to excessive air movements in the home. A draft from a window, door, air conditioner, dehumidifier, fan, or heating units causes rapid water loss from the foliage and flowers. Roots may be unable to absorb enough water to prevent wilting. Repeated exposure to drafts will cause leaf tips and margins to brown, the loss of oldest leaves, and premature flower or bud drop.

After a plant has grown in one pot for a year it may need to be shifted to a larger container. Turn the pot upside down and tap the edge sharply on the edge of a table or bench. If the soil is slightly moist, the soil ball will slip out of the pot in one piece.

If roots are clearly visible around the outside of the soil ball, the plant should be shifted to a larger pot. Plants should not be pot-bound because this condition requires more frequent watering and will soon retard the growth and reduce plant vigor. Use the next larger size pot both for appearances and for good growth. Keep the soil ball intact, and use new potting medium to fill the additional space in the large container. The roots will grow out into this new area and the plant will not have been disturbed by the transfer.

If roots are not visible, scrape a layer of old soil from the ball, and repot the plant in the same container. Use new medium to replace what was removed.

If old clay pots are used, they should be boiled for 30 minutes to kill any soil-borne diseases or insects. A new porous pot should first be soaked in water so that it will absorb moisture prior to adding the soil media. Soak previously used plastic containers in a chlorox bleach solution diluted 1:10 in water.

Much of the difficulty caused by disease and insects can be prevented by general precautions. These measures are simply aspects of good culture. Always use a sterilized growing medium and clean containers. Examine new plants thoroughly. Quarantine and watch for insect infestations. If after four or six weeks no problems develop the new plants can be added to the collection. Space plants so leaves do not touch. This will help reduce the spread of insects and help maintain normal air circulation. Always remove faded blooms and discolored or dead leaves, which can encourage disease problems. Water and fertilize regularly to maintain optimum growth and plant vigor, which makes plants more resistant to problems. With the dry atmosphere of home interiors and avoidance of wetting foliage, disease problems are few. Sucking insects such as aphids, mealy bugs, white flies, red spider mites, and scale insects are the most common pests. A Guide to Safe Pest Control Around the Home, Cornell Miscellaneous Bulletin S-74, is available from the Cooperative Extension office in each county or Mailing Room, Building 7, Research Park, Cornell University, Ithaca, N.Y. 14853 for $1.00.

Correcting Common Troubles

Most indoor plant problems have common symptoms that can be helpful in determining the cause. One faulty cultural aspect can be responsible for a plant problem, yet that same symptom can be caused by more than one incorrect cultural practice. As problems occur check the symptom on the following chart to determine which factor or factors need to be changed in the culture of the plant.

Do not expect plants to continue being attractive indefinitely because even with the best culture, each plant's native environment cannot be reproduced indoors, and with time a plant will decline. As plants become ungainly replace them rather than trying to rejuvenate unattractive specimens.
## Diagnostic Tips

### Possible Causes:

<table>
<thead>
<tr>
<th>Possible Causes</th>
<th>Foliation</th>
<th>Growth</th>
<th>Flowers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excess Light, that is, exposure to direct sun can be too intense for many plants</td>
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<tr>
<td>Insufficient Light impairs photosynthesis and flowering</td>
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<td>High Temperature, especially at night, reduces growth and vigor, also detrimental for flowering.</td>
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<tr>
<td>Low Temperature, especially continued exposure, is adverse to growth of plants</td>
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<tr>
<td>Overwatering or Poor Drainage reduces soil aeration: roots die, or water and nutrients are not absorbed</td>
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<tr>
<td>Lack of Water is a most limiting factor of growth</td>
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<td>Too Much Fertilizer becomes toxic and injures plant roots</td>
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<tr>
<td>Lack of Fertilizer causes a deficiency of nutrients required for plant growth</td>
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<td>Compacted soil reduces root growth and activity</td>
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<td>Drafts cause rapid water loss from the foliage and flowers</td>
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<tr>
<td>Daylength controls flowering of some plants (photoperiodism)</td>
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<td>Air Pollution, including an excess of manufactured or natural gas from faulty appliances</td>
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</table>
Some Popular Plants Listed by Light Requirements

Direct Sunlight

With direct light the sun shines through the window onto the plant surfaces. West and south windows offer the sun's highest intensities, but some plants do not tolerate this amount of light. Most flowering plants require direct light to develop flower buds. The cacti and succulents grow well at this intensity as do some foliage plants such as English ivy and those with colorful leaves such as coleus and croton. During mid-summer this exposure can be too intense for most plants and they should be moved to indirect light locations.
**Agave** — many species
**Aloe** — many species
**Beaucarnea recurvata** — Pony Tail
**Bromeliads** — many genera, some of which require lower light intensities
**Cacti** — many genera
**Capsicum annuum** — Christmas Pepper
**Chrysanthemum X morifolium** — Florist's Chrysanthemum
**Citrus** species (Calamondin, Kumquat, Lemon, Lime, Orange, and Tangerine)
**Clerodendrum thomsoniae** — Bleeding-Heart Vine
**Coccoloba uvifera** — Sea Grape
**Codiaeum variegatum var. pictum** — Croton
**Cordyline terminalis** — Ti Plant
**Crassula argentea** — Jade Plant
**Cycas revoluta** — Sago Palm
**Cyclamen persicum** — Florist’s Cyclamen
**Dizygotheca elegantissima** — False Aralia
**Euphorbia milii** — Crown-of-Thorns
**Euphorbia pulcherrima** — Poinsettia
**X Fatsia japonica** — Tree Ivy
**Gardenia jasminoides** — Gardenia
**Hedera helix** — English Ivy
**Hippapestrum hybrids** — Amaryllis
**Hoya carnosa** — Wax Plant
**Hydrangea macrophylla** — French Hydrangea
**Impatiens** — New Guinea hybrids
**Kalanchee blossfeldiana** — Easter Lily
**Lilium longiflorum var. eximium** — Musa acuminata — Banana
**Osmanthus fragrans** — Sweet Olive
**Passiflora X alatocaerulea** — Passionflower
**Pelargonium X hortorum** — Geranium
**Persea americana** — Avocado
**Phoenix roebelenii** — Pigmy Date Palm
**Rhododendron** — Indian hybrid, Florist’s Azalea
**Saxifraga stolonifera** — Strawberry Geranium
**Schlumbergera bridgesii** — Christmas Cactus
**Solanum pseudo-capsicum** — Christmas Cherry
**Streitizia reginae** — Bird-of-Paradise
**Yucca elephantipes** — spineless yucca
Indirect Bright Light

*Indirect bright light* is found in locations of an interior that do not receive direct sun, such as areas just adjacent to west and south windows. The sun streams through those windows, but the plant is located so that the sun does not shine on the plant surfaces. East and north windows are good locations for indirect bright light. At this intensity most foliage plants will receive adequate light for growth. Indirect light locations are excellent for flowering plants such as begonias and the gesneriads (such as African violets and gloxinias) during the high light intensity seasons of spring and summer.
**Norfolk Island Pine**

**Japanese Fatsia**

**Staghorn Fern**

**Anthurium scherzerianum** — Flamingo Flower

**Araucaria heterophylla** — Norfolk Island Pine

**Asparagus densiflorus 'Sprenger'** — Asparagus Fern

**Begonia X rex-cultorum** — Rex Begonia

**Brassia actinophylla (Schefflera actinophylla)** — Australian Umbrella Tree

**Cattleya Orchids** — many species and hybrids

**Chlorophytum comosum** — Spider Plant

**Olivia miniata** — Kaffir Lily

**Columnnea hybrids** — Goldfish Plant

**Cyperus alternifolius** — Umbrella Plant

**Dieffenbachia maculata 'Rudolph Roehrs'** — Yellow-leaf Dumb Cane

**Dracaena surculosa (Dracaena godseffiana)** — Gold-dust Dracaena

**Epipremnum aureum 'Marble Queen'** — Pothos

**Episcia cupreata** — Flame Violet

**Fatsia japonica** — Japanese Fatsia

**Ficus benjamina** — Weeping Fig

**Ficus elastica 'Decora'** — India Rubber Plant

**Ficus retusa** — Indian Laurel

**Fuchsia X hybrida** — Lady’s Ear-drops

**Maranta leuconeura var. kerchoveana** — Prayer Plant

**Monstera deliciosa** — Ceriman

**Nephrolepis exaltata 'Bostoniensis'** — Boston Fern

**Phalaenopsis** — many species and hybrids — Moth Orchid

**Philodendron hastatum** — Elephant’s Ear

**Philodendron selloum**

**Pilea cadierei** — Aluminum Plant

**Platycerium bifurcatum** — Staghorn Fern

**Saintpaulia ionantha** — African Violets

**Schefflera arboricola** — Dwarf Schefflera

**Sanecio mikanioides** — Germany Ivy

**Sinningia speciosa** — Gloxinia

**Tolmiea menziesii** — Piggyback Plant

**Tradescantia** — many species — Spiderwort
Low Light

The low light intensity areas receive only general illumination. They are more than 8 to 10 feet away from a window, at the center of a room, on an inside wall, or a hallway. All of these areas provide more room for plant materials than directly at, or adjacent to windows and are excellent places to display and enjoy plants. Only a few foliage plants are suitable for low light over a prolonged period. Other plants may be placed in low light if they are shifted to a bright location for a few days after having been in the low light area for a week or two. Another method is to have two sets of plants that can be shifted alternately every week; one set receives the required light while the other is being displayed in the decorative scheme.
Aglaonema modestum — Chinese Evergreen
Aspidistra elatior — Cast Iron Plant
Asplenium nidus — Bird’s-Nest Fern
Aucuba japonica ‘Variegata’ — Gold Dust Tree
Ceropegia woodii — Rosary Vine
Chamaedorea elegans — Parlor Palm
Cissus antarctica — Kangaroo Vine
Cissus rhombifolia — Grape Ivy
Cyrtomium falcatum — Holly Fern
Davilla fejeensis — Rabbit’s-Foot Fern
Dieffenbachia amoena — Dumb Cane
Dieffenbachia maculata — Spotted Dumb Cane
Dracaena concinna — Red-Margined Dracaena
Dracaena deremensis ‘Warneckii’ — Striped Dracaena
Dracaena fragrans ‘Massangeana’ — Corn Plant
Dracaena sanderana — Ribbon Plant
Fittonia verschaffeltii — Mosaic Plant
Howea forsterana — Sentry Palm
Pandanus veitchii — Screw Pine
Peperomia obtusifolia — Baby Rubber Plant
Philodendron cordatum — Heartleaf Philodendron
Pittosporum tobira — Pittosporum
Plectranthus nummularius — Swedish Ivy
Podocarpus macrophyllus var. maki — Sea Teak
Polypodium aureum — Hare’s-Foot Fern
Pteris cretica — Table Fern
Sansevieria trifasciata — Snake Plant
Sansevieria trifasciata ‘Hahnii’ — Bird’s-Nest Snake Plant
Spathiphyllum floribundum — Snowflake
Syngonium podophyllum — Arrowhead Vine

Kangaroo Vine
Pittosporum
Snowflower
Decorative Uses

Most homes and buildings should include interior plants, and different styles of decorating can help determine what plants to choose. The open simplicity of a contemporary interior can focus attention on plants. Bold-leaved, large growing plants such as dieffenbachia, monstera, philodendron, and figs are especially suitable to modern decor because they provide the size plants to make them a feature in the room.

Smaller growing plants such as geranium, ivy, fern, and begonia are better suited to the period or traditional interior. These decors feature more decorative types of furnishings and rooms generally have less space for large plants. Plants in these situations best serve as accessory decorations rather than as features. In traditional settings, many of the small varieties are often grouped together. In contemporary decor, several plants of a single variety such as chrysanthemum, sansevieria, or African violet can be massed to form a featured display.

Cane sections of the corn plant, Dracaena fragrans 'Massangeana,' grow to a size for bold display.

Large plants can define use areas.

The Australian umbrella tree, Brassaia actinophylla, is a popular selection for office locations.
Grape ivy, *Cissus rhombifolia*, (right) is suitable for a shelf area with a trailing growth habit.

Boston fern (below) can be used as an accessory in a traditional setting.

African violets (below, right) are valued for providing color throughout the year.

Low plants such as *Peperomia obtusifolia*, the Baby Rubber Plant, are appropriate for desk and table surfaces.

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**Selection of Plants**

A decoration can be made more interesting by the addition of new or different plants from florists’ shops.

To choose a plant for effective display, first consider where it will be located. If an individual plant or a small dish garden is to be used on a table, chest, or desk, select plants of low to moderate height. *Aglaonema, Dracaena, Peperomia, Sansevieria*, and *Saxifraga* are genera that provide many species suitable for use on surfaces in a room.

When using a specimen plant on the floor for accent or when combining several in a planter, the larger types can be used. Genera such as *Dracaena, Ficus, Monstera, Philodendron*, and *Schifflera* provide numerous species of plants that grow to a large size to make them a feature in the room (see page 1 showing *Yucca elephantipes*, the spineless yucca).

To be most attractive, a shelf, wall, or hanging container requires plants that have trailing or climbing growth habits. Various species of *Cissus, Hedera, Hoya, Philodendron*, and *Epipremnum* are effective plants for this use.

Frequently an area may be used to feature plants. A good treatment would make use of several plants of a single type such as African violets. A collection of one kind of plant, each grown in an identical container, gives a unified appearance, whereas a combination of many different types of plants in a single area often fails to achieve a good decorative appearance.

The vining philodendrons can be grown on supports to provide a mass display of foliage.
Containers for Effective Display

The use of an appropriate container is an important aspect in the display of potted plants. With a display of one plant or a combination of several, the plants are the most important items and the container is secondary. Select a container that blends well and is in scale with the plant. The type and size of plant will help determine the container size. The depth is especially important for the large foliage plants that require good anchorage.

Since plants are the main feature of a display the container should be kept plain. A container with bright flowers, figures, or designs painted or molded on its surface will attract more attention to itself than to the plant. A plain, smooth, dull-finish container is the most neutral type for displaying most plants effectively.

Like surface treatment, color can be too conspicuous on a container. Strong, bright colors such as red, yellow, and orange, and even bright blue or lavender are too eye-catching to be used except with flowering plants with blooms of the same colors. Soft greens with a touch of yellow or blue, or gray greens are the most neutral-colored containers. These colors tend to repeat stem and foliage colors and they blend in, rather than contrast, with the plant materials.

Use a container that repeats the color of existing furnishings or accessories of the room, or use a complementary color to provide a harmonious contrast with the room decor. This gives the plant display a more planned appearance in the setting. A plant in a standard clay pot can be more attractive if it is placed inside a jardiniere.

As with color and texture, the less unusual shapes of containers are the most usable. Avoid unique shaped containers which call attention to their unusual form, especially those made to look like animals or people. These containers actually are objects in their own right and the plants are merely accessory items.

It is not essential that a container have drainage. With a one- to two-inch layer of coarse sand or gravel in the bottom of the container and careful watering, the drainage hole is not necessary. This increases the possibilities when selecting a container.
The container and mat repeat the rectangular shape of the table surface for displaying this arrowhead vine, *Syngonium podophyllum*.

It is best to plant the multiple container with several plants of the same species, in this instance, *Peperomia orba*.

*Saintpaulias* featured for display, each in identical containers. After use the plants are returned to the site of culture.

The jardiniere was selected to repeat the main color of the decor to emphasize a planned display of *Dracaena deremensis ‘Warneckii’,* the Striped Dracaena.
Examples of combining plants in symmetrical (upper) and asymmetrical (lower) arrangements.

Ceriman

Individual Plants, Dish Gardens, and Planters

Flowering plants are most satisfactory for display when potted separately because of their temporary duration. Large foliage plants that serve a decorative purpose as specimen plants should be potted individually. Small foliage plants often appear better when several types are combined in a dish garden or planter. Frequently several potted plants within a home could be combined to make an effective planter. For successful culture the combined plants must have similar growth requirements. The light intensity and the water requirements should be the same for all plants. Avoid combinations of cacti and foliage plants because their cultural requirements differ. To achieve and maintain uniformity, combine plants of similar growth rates. Faster growing types such as philodendron soon encroach on slower growing ones such as dracaena, sanseviera, or peperomia.

Leave the plants in their pots and shift them around in several arrangements to find the best combination before transplanting. The arranging is easy while the plants are potted individually and it is this procedure that results in a most effective grouping.

For a symmetrical arrangement, feature a tall plant in the center with shorter plants on either side. For an asymmetrical design, place the tallest plant off center, balanced by lower plants on the opposite side. Balance and proportion between heights is just as vital to the appearance as balance of plant shapes and leaf outlines.

Allow ample space for each plant. If planted too close they will not only appear crowded but will grow poorly. On the other hand, plants set too far apart produce a sparse appearance. For good visual balance, the container should be in proportion to the mass of the plants.

Many homes feature a large built-in-planter. This should have drainage and be treated to prevent rusting. To insure better drainage, use a few inches of gravel in the bottom of the planter before adding the growing medium, or place the potted plants directly on the layer of gravel. The space between pots can be left open or filled with vermiculite, peat moss, or sphagnum moss. This is a simple way to maintain plants in a large container. The plants can be replaced or changed later without disturbing their root systems.
Care of Flowering Plants

Flowering plants need extra care to retain their blooms as long as possible in a home. Although they are more difficult to maintain than foliage plants, flowering plants provide effective color and are longer-lasting than cut flowers. After bloom, few flowering plants remain attractive. Requirements for continued growth and rebloom of some plants are difficult to provide; blooming may be satisfactory but will never equal that of plants grown in greenhouses. Perhaps the best practice is to provide conditions to prolong the bloom display as long as possible, then discard most flowering types. Select the more easily maintained foliage plants for continuous decorative use in the home.

Purchase flowering plants that have been maintained in prime condition in flower shops. Choose well-shaped plants with dark green foliage and a large number of buds. A few open flowers indicate color; developing buds extend the blooming period.

Care During Flowering

High light intensity, frequent watering, and low room temperatures are essential requirements for most flowering plants. Although ideal conditions are difficult to maintain indoors, the basic requirements should be supplied as nearly as possible to prolong flowering.

Light

In order to develop, flower buds require intense light. South or west windows that receive direct sunlight are ideal locations for most flowering plants. African violets, begonias, and gloxinias should receive direct sunlight only during the winter months, however. Plants in bloom can be used for decorative purposes in areas of a room that receive indirect light, but should not be left there indefinitely.

Temperature

The best night temperatures for flowering plants are cooler than those maintained in most homes. Where possible, flowering plants should be moved to a cool room at night. Measure the temperature of a room at plant level. Temperatures at eye level are higher than those at lower locations. Specific temperatures at which blooming will be prolonged are mentioned in later sections on individual plants.

Watering

Plants in flower usually require more water than those without blooms. Keep the soil moist at all times, but do not wet excessively. Apply water when the soil surface begins to feel dry. Never allow the foliage to wilt between applications. Insufficient water will cause premature flower and bud drop.
Specific
Flowering Plants

African Violet

Because their cultural requirements are more easily provided than those of other flowering plants and because they flower the year around, African violets are the most popular house plants in this country. Both single- and double-flowering plants are available throughout the year. Varieties range in flower color from white to pink, blue, lavender, and deep violet.

Flowering is primarily influenced by light. It may be necessary to try various locations to determine the best site for continuous flowering. If light is too intense, the foliage may be bleached and burned. Insufficient light causes poor flowering and elongated petioles. From November through February, locate plants to receive direct sunlight. Move the plants into indirect bright light from March through October.

African violets can be grown entirely under artificial light from two 40-watt fluorescent tubes in an industrial fixture. Gloxinias, episcias, and begonias also can be grown with this installation. One standard cool white and one daylight tube placed 8 to 12 inches above the foliage will provide minimum light necessary for flowering. At least 12 hours of light are required each day, but 18 hours of light produce more plant growth and flowering. A four-tube fixture (two tubes of each type) approximately doubles the light intensity, and produces more desirable plants.

Use water at room temperature for surface application to violets; cold or warm water on the foliage causes spotting. Bottom watering is convenient and satisfactory. Review the section on watering practices on page 4. Wick-watering containers are especially good for African violets; a fiberglass wick draws water by capillary action from a separate pan or reservoir beneath the pot into the soil. The soil is kept moist, neither excessively wet nor dry.

Night temperatures of 65°F. to 70°F. are satisfactory for violets; day temperatures can be five degrees higher. Foliage will curl downward and flowering will be retarded if plants are exposed to temperatures lower than 65°F.

Azalea

Single and semidouble flowering azaleas are available in winter and spring in shades of red and orange, or in white. Select well-shaped plants with a few open flowers. Room temperatures of 60°F. at night and full sunlight during the day are necessary for extended flowering. Regular watering, and spraying the leaves with water, will help prevent defoliation.

For continued growth and reflowering, azaleas require special care. After bloom keep the plants in cool, sunny locations. During active growth use a fertilizer with an acid residue to prevent yellowing of the foliage. Dissolve one level tablespoon of ammonium sulfate in a gallon of water and apply the solution every four weeks.

During frost-free months the plants can be grown outside in protected, semi-shaded locations. First shift the plants to slightly larger pots, removing a quarter of the original growing medium from around the root ball. Use acid peat moss for repotting in a larger container. During outdoor growth provide ample water and monthly applications of fertilizer.

An indoor storage period of four to six weeks at a temperature of 40°F. is required to develop flower buds in the fall. Light is necessary during storage to avoid leaf drop. After cold storage a temperature of 60°F. and full sunlight will force the plant into flower. Insufficient water at this time will cause bud drop.
Some varieties of potted azaleas are hardy on Long island and southern New York State and can be planted outdoors for continued growth.

**Begonias**

Christmas begonias are usually available throughout the winter months. Plants with a large number of buds will bloom for several weeks indoors. Keep the soil moist at all times; begonias require large amounts of water for flowering and to retain their succulent foliage. Cool temperatures are essential for all types of begonias. Night temperatures should be between 60°F and 65°F; during the day, the temperature can be 10 degrees higher. The best locations for Christmas begonias are in full sunlight. Discard the plant after flowering. It is one of the most difficult to maintain for growth and rebloom in the home.

Rieger elatior begonias are new, recently introduced varieties popular for their brilliant flower colors and dark green foliage. Blooms are single through double in a range of white, tints and shades of red, orange, yellow, and lavender. Plants grown indoors should be located for direct sun during the winter months and indirect bright light during spring and summer with a temperature range of 68°F to 70°F. When grown in the garden a shaded site will avoid foliage scorch. Some types are especially useful for hanging containers.

Tuberous-rooted begonia flowers are white, yellow, orange, or red. Although they do not bloom satisfactorily indoors, tubers should be started in the home for outdoor summer flowering.

Pot tubers during late winter in a mixture containing 25 to 50 percent peat moss. Place the concave tuber surface upward with the top of each tuber at the level of the soil surface. Start the tubers in shallow containers of peat moss or vermiculite if the top surface cannot be determined. When growth appears, each tuber should be potted in the soil mixture described above.

Tuberous begonias should be maintained at the temperatures recommended for Christmas begonias. Grow them in sunlight until May, and then move them into indirect bright light. In late May or June, tuberous begonias can be planted in a shaded garden site. Before moving the plants outside, water generously with a solution of one level teaspoon of 20-20-20 fertilizer per quart of water. Frequent watering and monthly fertilization will produce adequate growth and bloom. In the fall, withhold water and allow the plants to dry. The tubers can be placed in dry sand, peat moss, or vermiculite, and stored in a dry place at a temperature of about 50°F for the early winter.

**Christmas cactus**

Christmas cactus is a popular flowering house plant that is available throughout the year. Shades and tints of red are the usual flower colors, but white and orange types exist. These dwarf trailing plants are also grown as standard plants grafted onto upright forms of other cacti.

Although a member of the cactus family, Christmas cactus should not be kept dry like its relatives. Keep the soil moist to promote flowering. Locate plants in full sunlight in the daytime. Night temperatures should be 60°F to 65°F. This cactus can be grown outdoors during summer in cool shaded areas. Fertilizer should be applied during periods of active growth.

To have a plant in bloom for Christmas, begin exposing the plant to short days on September 1. Keep it in total darkness for 12 to 14 hours each night until buds form. The temperature should be under 65°F during this period. Buds will not form at temperatures over 70°F, even with long nights. At 55°F.
flowering occurs regardless of day length. Bud drop results when the temperature is too high or the light intensity too low. Other species, the Thanksgiving cactus and the Easter cactus, bloom earlier and later, respectively.

Christmas pepper

Christmas peppers, with bright red fruits and dark green foliage, should be purchased after the fruits are fully formed. Expose the plants to full sunlight and cool temperatures, and keep the soil moist to prolong the life of fruits and leaves. Discard a plant after it loses its fruits; it will not bloom again.

Chrysanthemum

Among the longest-lasting flowers for the home are potted and fresh-cut chrysanthemums, which are available throughout the year. Varieties are available in yellow, bronze, red, lavender, pink, and white.

A long period of bloom can be obtained by selecting plants with partially opened buds. Direct sunlight and night temperatures of 60°F to 65°F will assure full color in the developing flowers, and will prolong bloom. Chrysanthemums require large amounts of water; the soil must be kept moist to avoid wilting.

Most potted chrysanthemums are tender greenhouse varieties that are not satisfactory for outdoor use; their flower buds are killed by frost before bloom and the plants are not winter hardy. Garden varieties that can be planted outdoors for fall rebloom are available in the spring, however.

Citrus

Many species and varieties of citrus plants (oranges, lemons, limes, tangerines, and grapefruits) are used as ornamental plants. Their glossy dark-green foliage, fragrant bloom, and colorful fruit are highly decorative. Otaheite and Calamondin oranges and Ponderosa and Meyer lemons are especially desirable dwarf types that flower and bear fruit while they are very small and suitable for container culture.

Direct sunlight is essential to promote flowering. Plants grow and develop fruits best at temperatures ranging from 50°F to 70°F. The soil must be kept moist; a potting mixture of equal parts of garden loam, peat moss, and either sand or horticultural grade perlite will assure good drainage. An acid growing medium is required to prevent yellowing of the foliage. During periods of active growth, the fertilizer solution recommended for azaleas should be applied. During summer months the plants can be moved outdoors; well-grown specimens are attractive on terraces or patios. Ungainly growth should be pruned to keep the plant compact.

Citrus plants can be grown from seeds, but the dwarf types that are especially adapted for pot culture are usually propagated by grafting and from cuttings. A common practice in homes is to grow plants from seeds of regular citrus fruits, although they may not reproduce the characteristics of parent trees and may never grow to reach fruiting age.

In order to bear fruit, the flowers of a citrus plant must be crosspollinated. Use a small brush to transfer the pollen from one flower to the stigma of another on a plant grown in the house. Plants that lack vigor or have been injured by insects will not bear fruit.

Clerodendrum thomsoniae

The Bleeding Heart is a twining vine native to West Africa. To keep it at a convenient indoor size prune during the winter months when the plant is in a
semidormant condition. The common name describes its red flowers hanging from white, heart-shaped bracts. It is not the garden bleeding heart (Dicentra).

Requirements for best growth are direct sun and high humidity. Keep the growing medium evenly moist except during the winter dormant period when it can be watered less frequently. From spring through fall, while the plant is actively growing, it should be fertilized every other week.

Research has shown that short days and high light intensity promote flowering. Provide the same photoperiodic conditions as for poinsettias. The temperature should be about 70°F; a higher temperature will encourage vegetative growth and inhibit bloom.

Cyclamen

Cyclamen plants are distinguished for their compact foliage and abundant bloom. The flowers, borne at a level above the leaves, are white or shades and tints of red. The plants are difficult to maintain in most homes. They require night temperatures of 50°F, and day temperatures of 60°F to 65°F in full sunlight. The leaves turn yellow quickly and flower buds die if the temperature is too high or light intensity too low. Inadequate moisture also produces adverse effects.

After flowering withhold water to induce dormancy, and store the pot in a cool location until the following June. Repot the corm in a sterilized soil mixture of one part peat moss, one part garden loam, and two parts coarse sand. Leave the upper half of the corm exposed to prevent rotting.

Fertilize the plant twice a month with a quarter teaspoon of 5–10–5 fertilizer mixed in a quart of water. Keep the plant in indirect bright light until mid-September, then expose it to full sunlight at low temperatures for mid-winter flowering.

Easter Lily

The traditional potted Easter lily has large, fragrant, pure white flowers. Cool temperatures, direct sunlight, and adequate soil moisture will prolong its flowers. As buds open, the yellow anthers can be removed to prevent discoloration of the petals.

The bulbs are not reliably hardy, but may flower again in late summer if planted in the garden in May. Set the bulbs six inches deep in sunny locations on well-drained sites.

Fuchsia

Fuchsias provide a most attractive bloom for summer culture outdoors or year-round growth in greenhouses. Commonly called Lady's Ear-drop, the hanging flowers bloom in colors from white to tints and shades of red, orange, orchid, and blue. The flowers are single or double and many hybrids are bicolor with combinations of the various hues.

One of the few flowering plants for shaded locations, fuchsias have long been popular for container culture and in bed plantings outdoors. More recently here in the northeast, the trailing-type hybrids are featured in hanging containers.

The soil should be kept moist to prevent bud drop and to promote growth for continual bloom during the summer months. Daily watering is usually unnecessary for plants grown in hanging containers. A nutrient application every two weeks will also help maintain vigor and bloom.

Fuchsias are not winter hardy, nor are they the best plants for today's home interiors. The required low night temperatures and high light intensity are
difficult to provide, and the plants are susceptible to numerous insects.
Discard the plants after frost and purchase new ones the next spring. If
plants need to be propagated, follow the same procedures as for geraniums.

Gardenia

Although gardenias will not always develop their fragrant white flowers
indoors, their dark green leaves make them attractive foliage plants. Night
temperatures of 62°F to 65°F (higher temperature will cause bud drop), and
daytime temperatures of 72°F to 75°F are essential for blooming. Full sun-
light is needed for both foliage and bud development.

Frequent watering, and additional humidity, will also help prevent bud drop
and yellowing of the leaves. Because gardenias must be in acid soil to
continue growth, wet the soil thoroughly once a month from March to
November with a solution of two level teaspoons of ammonium sulfate in a
gallon of water. If repotting is necessary, transfer the plant before August,
using a mixture of equal parts peat moss and garden loam.

Direct mid-summer sunlight is too intense for gardenias; they should
receive indirect bright light. If the plants are moved outdoors during frost-free
weather, locate them to receive morning sun and afternoon shade, and follow
the watering and fertilizing practices recommended for indoor culture.

Geranium

Geraniums will grow and bloom with little more than basic care. They are
available in the spring in white or in shades and tints of red and orange.
Because low light intensity reduces their flowering and causes elongated
growth, they need full sunlight for indoor culture. Night temperatures between
55°F and 60°F promote development of flower buds. The soil should be kept
moist, and low-concentration fertilizer should be applied regularly. A deficien-
cy of water or nutrients will stop growth and bloom.

Geraniums have long been a favorite outdoor plant for gardens, planters,
and window boxes. Because they are tender woody perennials, they are not
winter hardy. It is best to discard plants in the fall and purchase new ones the
following spring.

Choice plants can be propagated by cutting four-inch long terminal or
lateral shoots from the plant in late August or early September. Plant each
cutting in a small pot containing equal parts peat moss and coarse sand.
Shade the cuttings from direct sunlight and keep the medium moist until they
root. After roots are one-inch long, reset the plants in three- or four-inch pots,
using the standard soil mixture described on page 6. When the plants are four
or five inches tall, cut or pinch off the tips to induce branching. Provide the
culture recommended above for purchased plants.
Gloxinia

Gloxinias are colorful indoor plants that are available throughout the year. The bell-shaped flowers are white, red, violet, or combinations of these hues. Various color combinations also appear in the spotted-flower type.

A member of the same family as the African violet, these plants have common cultural needs; their temperature, light intensity, and watering requirements are similar. Gloxinias react quickly to unfavorable growing conditions. Flower buds may fail to develop because of improper watering, low humidity, or quick temperature changes.

Reducing soil moisture will hasten the natural dormancy that occurs after gloxinias flower. The tuber can be retained for regrowth by storing it in the pot in a cool place (minimum temperature of 50°F). For rebloom the following spring, repot the tuber in February in the standard soil mixture described on page 6.

The plants will require low concentration fertilizer from the time they are repotted until they begin flowering. Gloxinias can be grown to maturity with artificial light as described on page 2.

Hydrangea

Hydrangeas produce large dense clusters of pink, blue, or white flowers. For extended display, purchase plants with partially opened flowers. The plants require cool night temperatures and frequent watering. Because of the large leaf area, insufficient water causes deterioration of the flowers, and spotting and yellowing of the leaves. The plants should be protected from direct sunlight as soon as the flowers begin showing color.

To retain hydrangeas after flowering, locate them in full sunlight indoors and keep the soil moist. In the spring, after danger of frost is past, move the plants outdoors to an area that receives afternoon shade. Sink the pot to the rim and prune each stem to two inches to promote new growth.

Keep the soil moist during summer, and fertilize the plants according to their flower color. To retain pink flowers, apply one teaspoon of 5–10–5 fertilizer in a gallon of water once each month. For a blue variety, apply one tablespoon of ammonium sulfate in a gallon of water each month. White flowers are not affected, so either fertilizer can be used.

Flower buds will form by late summer. To avoid injury, bring the plants indoors after the first light frost, and store them in the dark at a temperature of 40°F for six to eight weeks while the buds develop. Water the plants regularly while they are in storage. The leaves will drop during storage, but new foliage develops and bloom occurs within three months after the plants are exposed to full sunlight and 60°F night temperatures. Hydrangeas can be planted outdoors in warmer sections of the northeast.
Impatiens

The compact forms of impatiens sultani cultivars are perhaps the most popular bedding plants for shade and semishade sites in the garden. Recently new varieties of New Guinea hybrid impatiens have been introduced that are desirable for culture as plants for flowering and foliage indoors. These impatiens offer blooms of large size in a color range from white through pastel tints of pink and lavender, orange, and scarlet. Some hybrids have multicolored leaves variegated with white, yellow, or pink, which make attractive foliage plants.

The growing medium should be kept evenly moist. Fertilize once a month with one level teaspoon of 20–20–20 per quart of water. During winter months, the plants should have full sunlight or artificial light as described for African violets. Night temperatures of 60°F to 65°F are satisfactory for impatiens; day temperatures can be five degrees higher. Prune or cut back plants if they grow too large. The cuttings can be easily rooted in a mixture of half sand and half peat moss. During frost-free months the plants can be grown outside in semishaded locations.

Jerusalem cherry

Jerusalem cherry plants are grown from seeds for the Christmas season. Keep the plants as cool as possible in full sunlight, with uniformly moist soil. Leaves and the scarlet or red-orange berries drop as the plants mature. Because subsequent growth is ungainly, flowering is poor, and fruit set limited, plants should be discarded after berries drop. The fruit is poisonous if eaten.

Kalanchoe

Kalanchoe plants are small, compact, and bear red, orange, and yellow flowers in clusters above the foliage. The plants are usually available throughout the winter. For extended bloom they require cool temperatures, full sunlight, and constantly moist soil.

After flowering, the plants can be retained for their foliage if they receive direct sunlight; ungainly new growth develops if they receive too little light. Rebloom is unreliable without controlled daylength; for Christmas bloom, put the plants in complete darkness from 6:00 p.m. until 7:00 a.m. for 30 days, beginning September 1. After this treatment plants will develop buds under normal conditions.

Orchids

Orchids are grown for the great variety of flower colors and forms. Although greenhouse culture is required to produce quality plants and bloom, the genera Cattleya, Epidendrum, Oncidium, and Phalaenopsis include species and hybrid varieties that can be grown in the home. Because the coarse, stiff foliage of orchids is seldom attractive in itself, it is best to purchase potted, flowering-size plants. To determine the best location for orchids, try them in several places for several months. Although the plants need direct sunlight during the winter, from April until mid-October place them in indirect bright light to avoid foliage burn. Mature plants require night temperatures of 55°F to 65°F, and day temperatures 10 degrees higher.

Most orchids are potted in one of the various bark materials, usually fir bark. Frequency of watering varies with the type of growing medium. Keep the medium moist at all times. When new growth starts drench the medium
once each week with a half teaspoon 20–20–20 fertilizer dissolved in a quart of water. Low light intensity, incorrect temperatures, or lack of nutrients can prevent flowering.

**Poinsettia**

The true flowers of poinsettias are inconspicuous parts in the centers of colorful bract clusters. Depending upon variety, the bracts are red, pink, cream, or white. Select plants in full color.

To prevent leaf drop, poinsettias must be kept moist and protected from drafts. They also require direct sunlight and cool night temperatures. New cultivars provide very extended bloom under home conditions.

Poinsettias are among the most difficult plants to rebloom in the home. After the plants begin to drop their leaves, withhold water to encourage dormancy, and store the plants in a cool place (50°F to 60°F). After the danger of frost is past in spring, move the plants outdoors into full sunlight. Prune two or three inches from the end of each stem; the plants will develop a large amount of new growth during summer.

In July or August remove three- or four-inch cuttings from the new growth on the plant. Insert each cutting in a small pot containing a mixture of half sand and half peat moss. Keep the cuttings shaded and watered during the rooting period (about three weeks). Then set the plants in larger pots in the standard mixture described on page 6.

Locate the plants in full sunlight, and provide a temperature range of 60°F to 70°F at night. Keep the soil moist, and apply a fertilizer solution (one level teaspoon of 20–20–20 in one gallon water) each week.

Poinsettias form flower buds when the days are shorter than 12 hours. Beginning the first of October, protect the plants from light by placing them in a dark closet between 5:00 p.m. and 8:00 a.m. Exposure to artificial light will inhibit flowering. After 40 days of this treatment, the plants can be kept in normally lighted rooms. With water, fertilizer, and low night temperatures, the plants will flower during December.