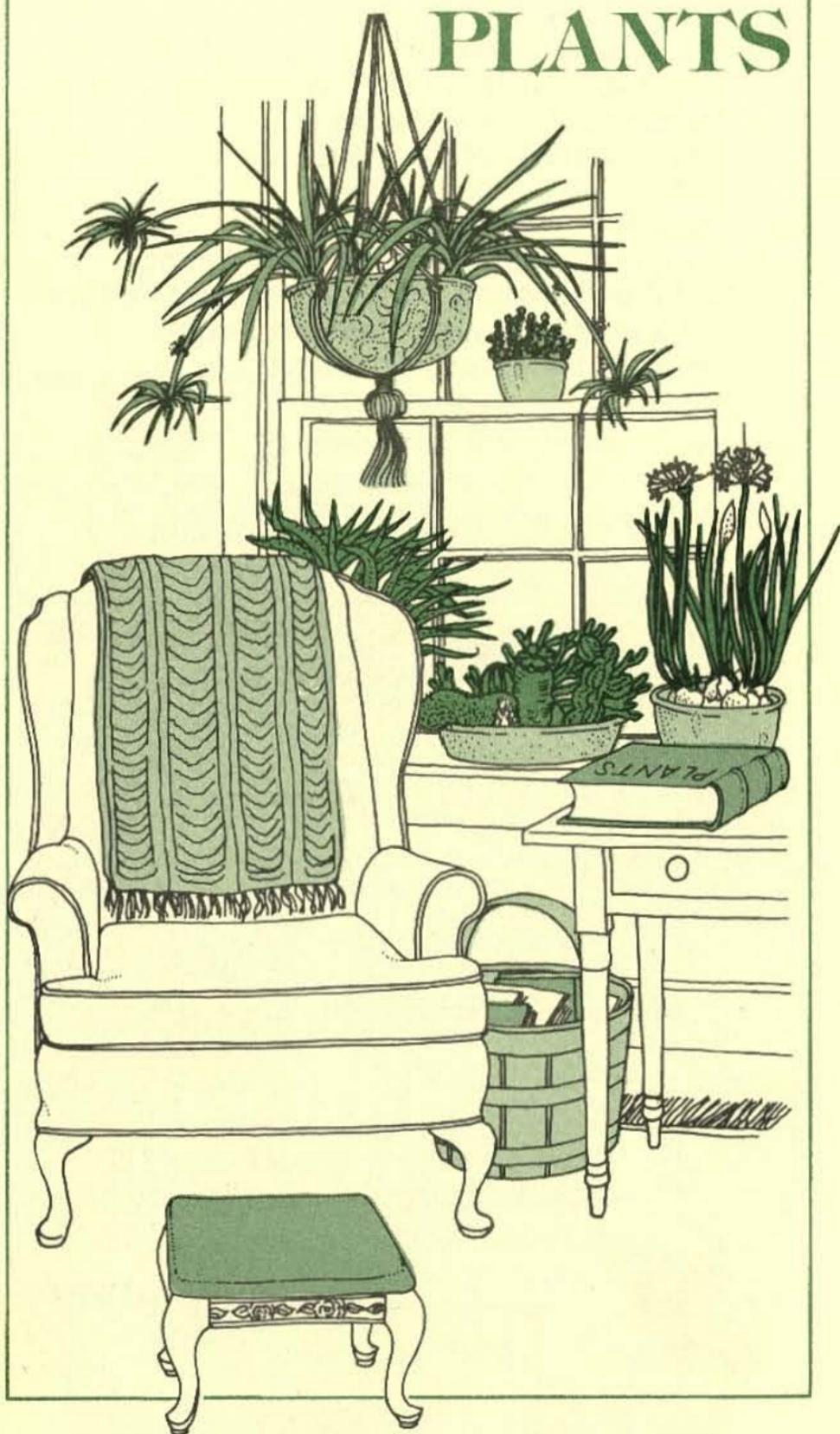


The Care and Culture of HOUSE PLANTS



COOPERATIVE EXTENSION SERVICE
COLLEGE OF AGRICULTURE AND NATURAL RESOURCES
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The Care and Culture of HOUSE PLANTS



Plants create a very special feeling in the home. They provide warmth and life and they soften the architectural features of rooms. Plants become an important part of the arrangement of rooms.

They can be either a feature or background, but they should be an integral part of the room arrangement. Whatever your taste in plants, there is generally a plant that will fit your taste and the environment in which you would like to place it.

PURCHASING CONSIDERATIONS

1. Purpose for the purchase — will the plant selected create the aesthetic effect that you wish to achieve?
2. Will the cultural requirements of the plant be met in the location you wish to place it? Cultural requirements include light, temperature and humidity.
3. Will the plant being considered outgrow its location too quickly?

Plants should be viewed as perishable items. Some will outgrow their locations while others will lose their lower leaves. At in-

tervals they may need to be replaced. A plant generally will not last "forever." Several plants are actually trees in nature and they may approach that in the home as well.

Remember that house plants have different environmental needs since they come from different parts of the world. Where one may grow poorly another may do well.

FACTORS AFFECTING GROWTH OF PLANTS

Light

The most important factor affecting growth of plants in the home is light. Plants that are not receiving enough light will have smaller leaves, longer spaces between the leaves, and leaves that turn yellow and drop. Plants that receive too much light will have a scorched look and should be given less light.

Flowering plants generally require sunlight or bright light most of the day. Succulents, cacti, and plants with colored leaves, like coleus, need more light. Variegation in leaves will become more intense if plants receive the proper amount of light.

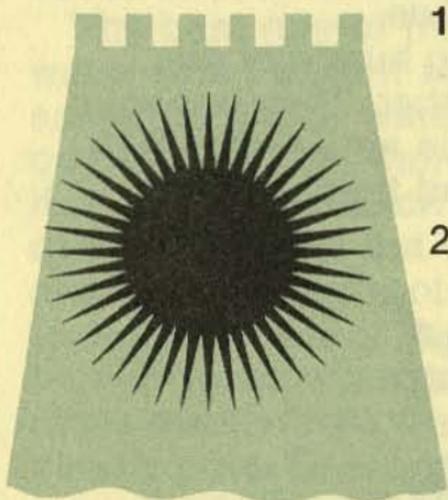
Morning light is advantageous to many plants. The hot afternoon sun, which is often coupled with higher temperatures, is not tolerated by some plants and may scorch them.

Some foliage plants will grow in low light, but the light should at least be bright enough during the day for comfortable reading.

Make sure you know the exposure and the amount of light a given location receives before selecting a plant for that area. Try to match plant requirements with particular light situations in your home.



GENERAL LIGHT CATEGORIES



1. *Sunny* — light in unshaded windows, generally facing south, southeast or west.
2. *Bright Light* — light received through a thin or lightweight curtain in the exposures noted above. A few hours of morning sun is ideal.

3. *Dim Light* — light in a room interior distant from windows, or light in northern windows. Remember plants that barely survive in dim light may grow better in bright light.

Temperature

Most house plants will grow well at a day temperature of 65° to 75° F (18° to 24° C) but prefer a night temperature about 10° lower. Plants that are grown in continuously high temperatures tend to become spindly and weak.

Avoid placing plants in cold drafts, in front of furnace ducts or on TV sets. Extreme cold, heat, or blasts of dry air are not conducive to good plant growth.

In winter keep plants out of overheated rooms and well away from wood stoves and fireplaces. In the summer, give them the cooler locations. Be alert to the fact that locations near windows in the winter may be too cold. During severely cold nights, you may wish to move plants away from windows or pull shades to protect them from low temperatures.

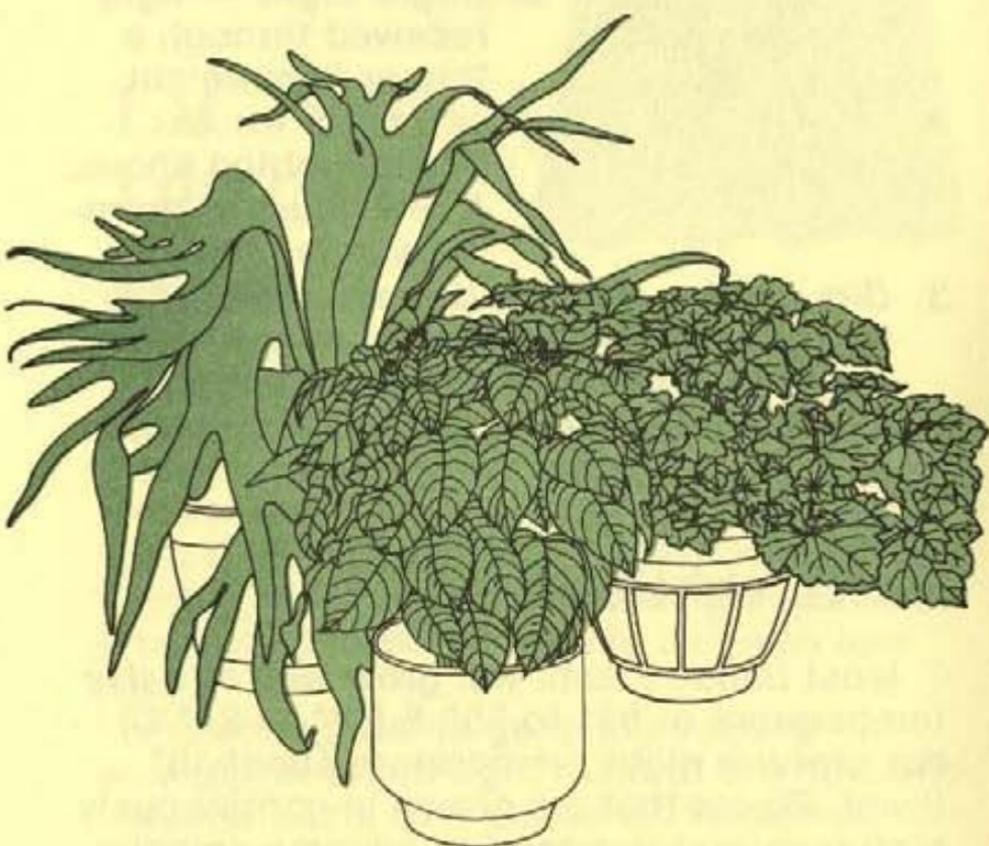
Moisture

House plants prefer relatively high humidity. This may be difficult to obtain in some homes in winter. Plants that suffer

from too little humidity will show signs of browning of leaf tips and flowering plants may lose their flower buds.

Methods of increasing humidity are:

1. Group plants together. They transpire (emit) water into the air which raises the humidity around them.



2. Place plants individually or in groups on saucers, dishes or pans. Put pebbles in the pan and add water. The evaporating water will increase the humidity around the plant. Keep water in the bottom of the pan, but **NEVER** allow the pots to sit in the water. Water-logged soil will cause root damage.
3. Misting will help on a temporary basis, but the higher humidity effect only lasts a short time. However, it is a good way to clean leaves.

Watering

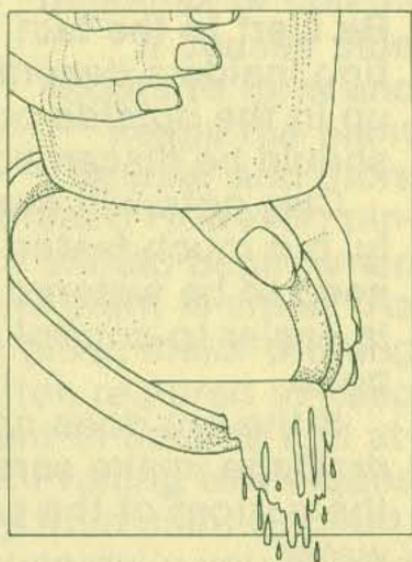
Improper watering is probably the single most important factor in the death of plants

in the home. Generally, but not always, the cause is overwatering.

The best rule of thumb to follow is to water when a plant needs it, not on a schedule. Never water plants a little each day. Water them thoroughly when they need it. A little water each day will keep the top of the pot moist but the lower part dries out and that inhibits root growth. A plant's need for water will vary according to temperature, humidity and the season. Water evaporates more readily from clay pots than ceramic or plastic pots. Check plants to see whether they need water. One method of checking is to touch the soil. If it feels dry, then add water. Be alert to the fact that large plastic or ceramic pots might be dry on top but moist in the middle.

If a plant needs water, give it enough lukewarm water to pass through the soil and dampen the saucer below. Do not allow the plant to stand in a water-filled saucer. If you water from the bottom, let the plant sit in the water until the surface is moist then discard the water not absorbed. If plants stand in water too long, the tiny root hairs begin to rot and the plant will begin to degenerate.

During the winter months, plants will likely require less water than during the summer months.



Remember that watering frequency depends on the soil mix, season, amount of light, temperature, humidity, plant species,

pot type and pot size. Also note that hanging plants tend to dry out faster.

Containers

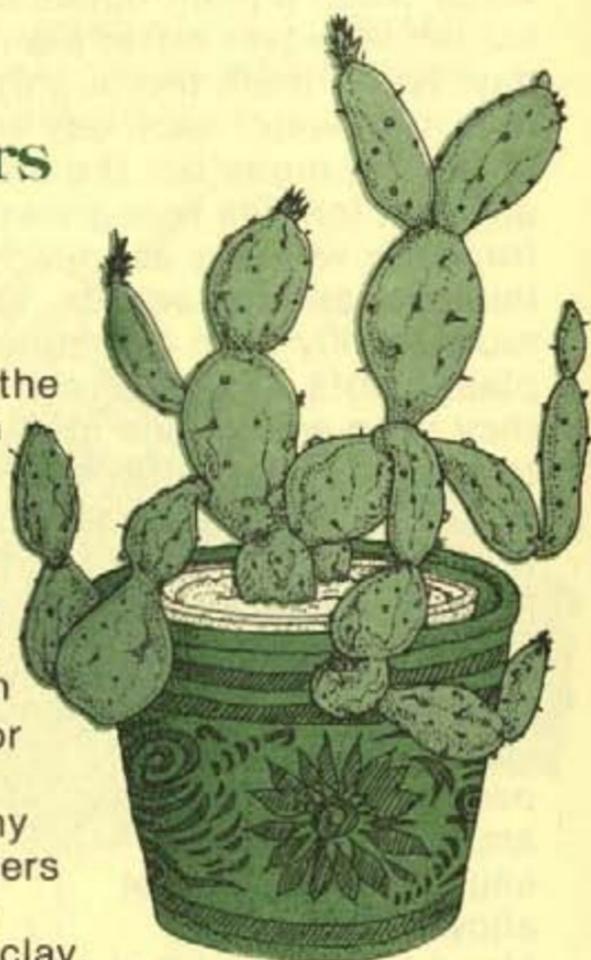
Selecting the container is an important part of creating the feeling you wish to achieve in your room. The container should enhance the plant and be coordinated with the interior decor of your home.

There are many types of containers available on the market. Plastic, clay, metal, ceramic and wood are just a few. The pot should have a hole in the bottom and be placed on a saucer or placed on a saucer in a basket or in another decorative pot (double potting). Be alert to the fact that if you have pots sitting inside a decorative pot, water may build up in the outside pot. That excess water should be discarded.

Clay pots will evaporate water more evenly, but much faster. Plants in clay pots will need to be watered more frequently. But it is easier to control overwatering in clay pots.

If the pot does not have a means of drainage, make sure there is ample gravel in the bottom of the pot to retain excess water.

The inside of brass, copper, pewter or iron containers should be lined with plastic to prevent corrosion by nutrient salts.

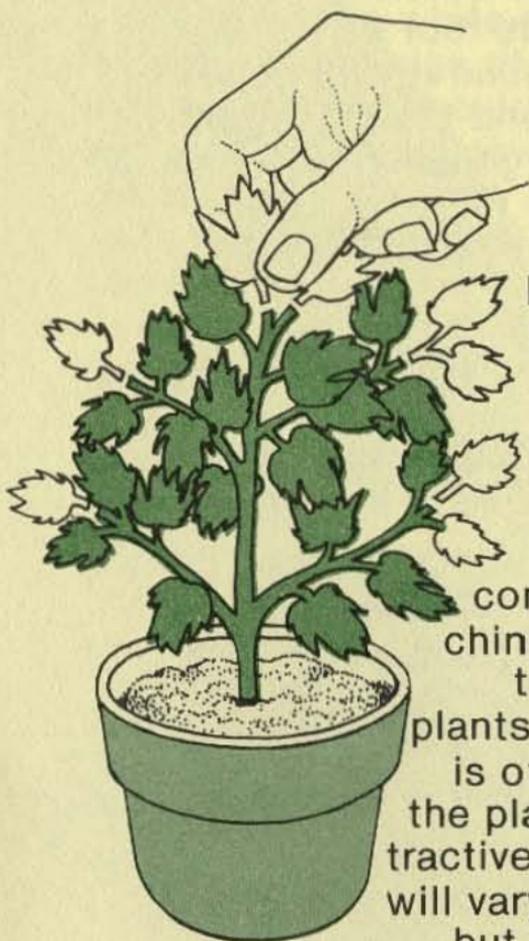


Soil

A good soil mix must support the plant in addition to supplying the needed moisture, oxygen and nutrients. Soil should drain well. A good all purpose soil mix is 1/3 organic matter (peatmoss, manure or compost), 1/3 soil lightener (sand or perlite) and 1/3 soil.

Native soils generally do not make a good house plant potting mixture, but there are many potting mixtures on the market. It is often more convenient to purchase the already prepared mixture. Just make sure the mixture is light and provides good drainage.

Some plants require mixes different from the above formula. Cacti and succulents prefer well drained mixtures with additional soil lighteners, while African violets and gloxinias prefer additional organic matter.



Training

Plants can be controlled by either pinching or pruning. If you pinch (remove) the tip on plants like begonias or coleus it causes side shoots to form and keeps the plant bushier and more compact. However, pinching should begin when the plant is small. As plants grow, major pruning is often required to keep the plant in bounds and attractive. Pruning techniques will vary from plant to plant, but generally you should

prune stems back to a leaf or stem joint. You should prune so that the plant does not appear hedged or sheared. Remove old or

discolored leaves at regular intervals. Large house plants like dieffenbachia and schefflera can be cut back to four-to-six-inch stubs which will generally resprout.

Repotting

Plant top growth is in direct proportion to root growth. If the top growth is vigorous, then the pot is probably of ample size. If the plant begins to lose its vigor, one of the reasons might be that it is pot bound. Plants that require frequent watering are often pot bound and should be transplanted (shifted) into a larger container.

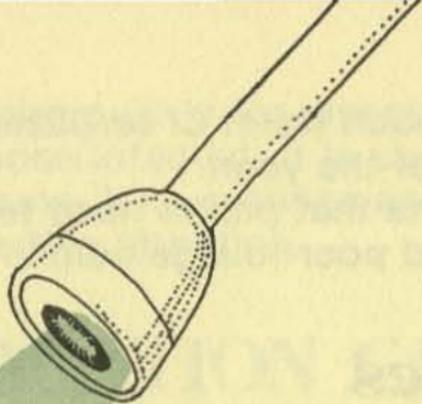
Plants should be shifted into the next larger size pot. If you use too large a pot, the mix may retain too much water and root damage may result.

To shift, remove the plant from its pot. If the roots are very thick, loosen them gently. Add new soil to the bottom of the new container and place the root ball of the plant in the pot and fill around it with new soil. Tamp the soil around the plant gently, being sure to allow enough water space on the surface of the pot. Water the plant thoroughly.

Some Additional Hints

Plants will not be one-sided if they are rotated in the same location on a regular basis.





Plants benefit from an occasional shower or washing. This keeps the plants clean and shiny and may remove some insects.

A feather duster can be used to clean fuzzy plant leaves.

Try some new plants and learn about them.

All plants require fresh air, but not drafts. Both roots and tops use air.

If you need a particular plant to create a given effect and the growing conditions are not ideal in the desired location, purchase two such plants and rotate or change them in various rooms. This way you can provide each plant with ideal conditions for a time.

If you have a white-grey crystal build-up on pots, it is a sign of excessive salt. Used, salt-caked pots should be soaked in water and washed thoroughly. Regularly drench the soil with water to leach some of the salts out, making sure water passes through the soil.

Fertilization

Fertilizing once a month is usually sufficient to keep a plant healthy. Fertilizing should begin about two months after purchase. Actively growing and flowering plants may need fertilizing more frequently.

Foliage plants that are appropriate in size may only need to be fertilized once or twice a year as you do not want them to outgrow their location.

It is important to select a balanced fertilizer which contains nitrogen, phosphorus and potassium. Follow the package directions carefully.

Many house plants go through a rest period during the winter months and do not

require as much water or fertilizer as they do the rest of the year.

Some signs that plants need fertilizer are bud drop and poor foliage color.

Diseases

Diseases are not often a problem with house plants. Rotting of stems and roots is usually caused by overwatering. Readjust your watering techniques to prevent the rotting.

Powdery mildew may be a problem, particularly on begonias. Mildew grows on the leaf surfaces of susceptible plants and can be controlled by lowering the humidity and increasing the air flow around the plants.

SUMMER CARE

Moving plants outside is a good method for growing as well as rejuvenating house plants. Plants should first be moved to a shady location. Pots can be submerged in the soil for support as well as to assist in the retention of moisture. As plants adjust to being outside, move those that like more light to a brighter location. Pay special attention to watering. Plants should also be fertilized on a regular basis while outside. Some plants, like begonias and coleus, can be planted directly into the flower border. Cuttings in the fall will give you new plants for the winter.

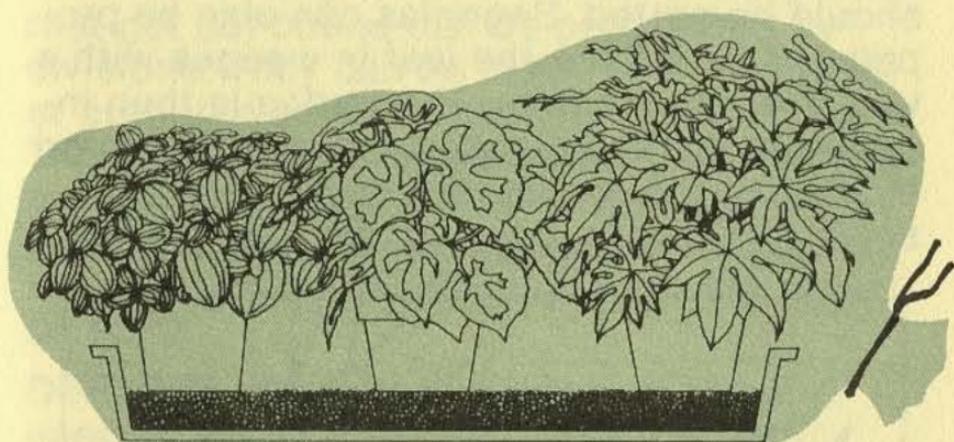
BRINGING PLANTS INSIDE FOR THE WINTER

Plants should be brought indoors around the first of September. Plants left out beyond this time will begin to be affected by the cool nights and will more readily drop leaves when they are moved inside. Check

all plants thoroughly for insects and discard or treat those infected. It is also a good time to prune, take cuttings and repot those plants needing attention.

VACATION CARE

If you are going to be away and you do not have anyone to tend your plants, a good method to keep plants from drying out is to group plants in the middle of a room in good light, water them well and then cover them with plastic. A transparent plastic bag from the cleaners often works well. The plastic keeps the humidity high and reduces the need for watering.



Do Not Close Tightly

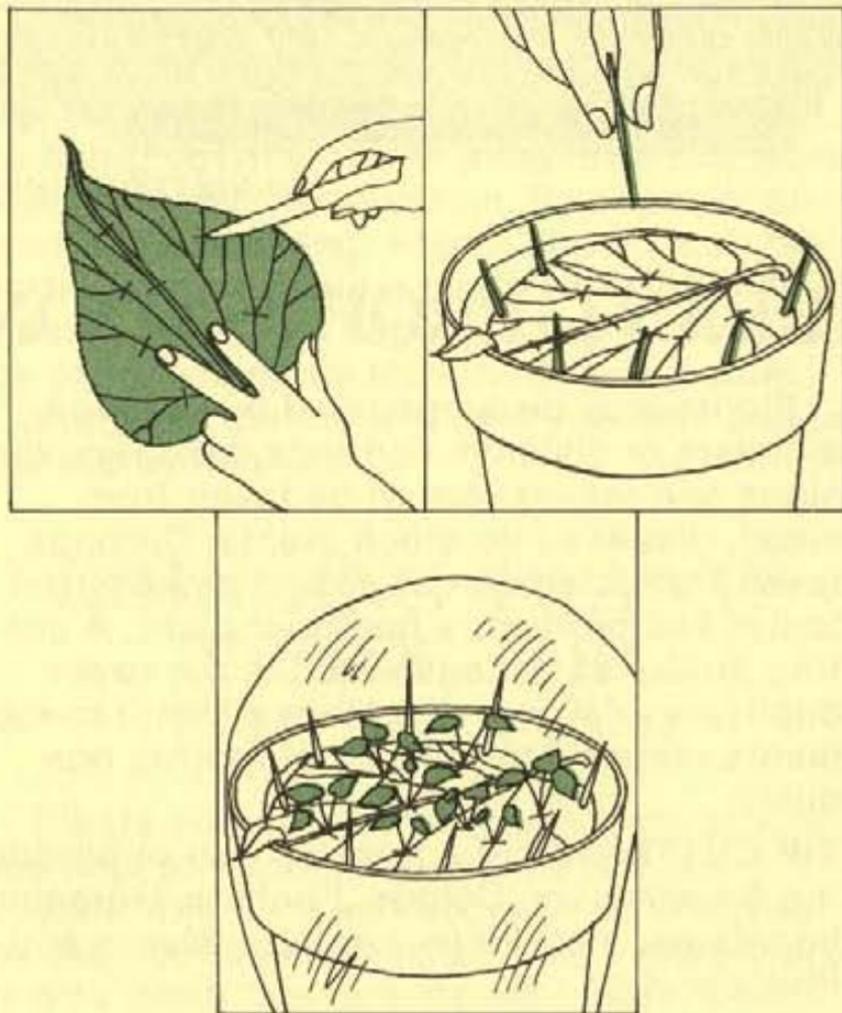
PLANT PROPAGATION

Plants may be propagated by cuttings, airdlayers or division. Cuttings, airdlayers, divisions and leaves should be taken from clean, disease-free stock plants. Cuttings taken from clean stock plants usually root faster and produce a healthier plant. A cutting produces a plant which is the exact duplicate of its parent. More difficult-to-root plants respond to the use of rooting hormone.

TIP CUTTINGS are a popular way of producing Swedish Ivy, Coleus, Fuchsia, Geraniums, Impatiens, Inch Plant, Lantana, Myrtle and Philodendron.

A tip cutting is usually 2" to 4" and comes from the tip of the stem. The cutting is prepared by cutting to the desired length and removing the lower leaves to have a stem which can be placed into the rooting mix. Any flowers or seed heads should be removed. Many cuttings can also easily be rooted in water.

LEAF CUTTINGS are used to propagate African Violets, Rex Begonias, Peperomias and species of Sansevieria (snake plant). A leaf of the Rex Begonia can be propagated by slitting the veins and placing the leaf on to the rooting mix. The leaf should be held down with a toothpick or small stone. From the cuts in the veins many plantlets will grow. When large enough, the plantlets should be potted. Begonias can also be propagated by cutting the leaf in wedges with a vein down the middle. The wedge is then inserted in the soil. Sansevieria may be rooted by cutting the leaves into three inch sections with the *base* placed into the mix.



SINGLE LEAVES of Peperomia, Kalanchoe, Jade Plant, Gloxinias and many others can be placed in the rooting mix to be rooted. In time new plantlets will develop from the base. As the size dictates, plantlets should be removed and potted.

CANE CUTTINGS can be used to propagate Dieffenbachia, Dracaena and others. To do this type of propagating, the stem is cut into pieces two to three inches long. Each section should contain a bud or node. The cutting is placed in the mix (bottom first) until rooted.

DIVISION is a method of propagation best used on plants such as Sansevieria, multiple crown of African Violet, Aspidistra, Orchids, Ferns and many other plants. Usually plants that get pot-bound can be propagated by divisions. They can be made by breaking off or cutting plantlets from the mother plant. The division usually has a stem, leaves, and its own set of roots. After dividing, the plantlet will grow like its parent. A sharp knife should be used to cut apart the crowded plant.

OFFSETS are used to propagate a few specific plants. The young plantlet (off-shoot or off-set) has its own root system even though it is attached to the mother plant. The young plantlet is severed from the mother plant and potted. Spider plants and piggyback plants are examples.

Covering the cuttings with plastic helps increase the humidity around the plant, thus spurring rooting action.

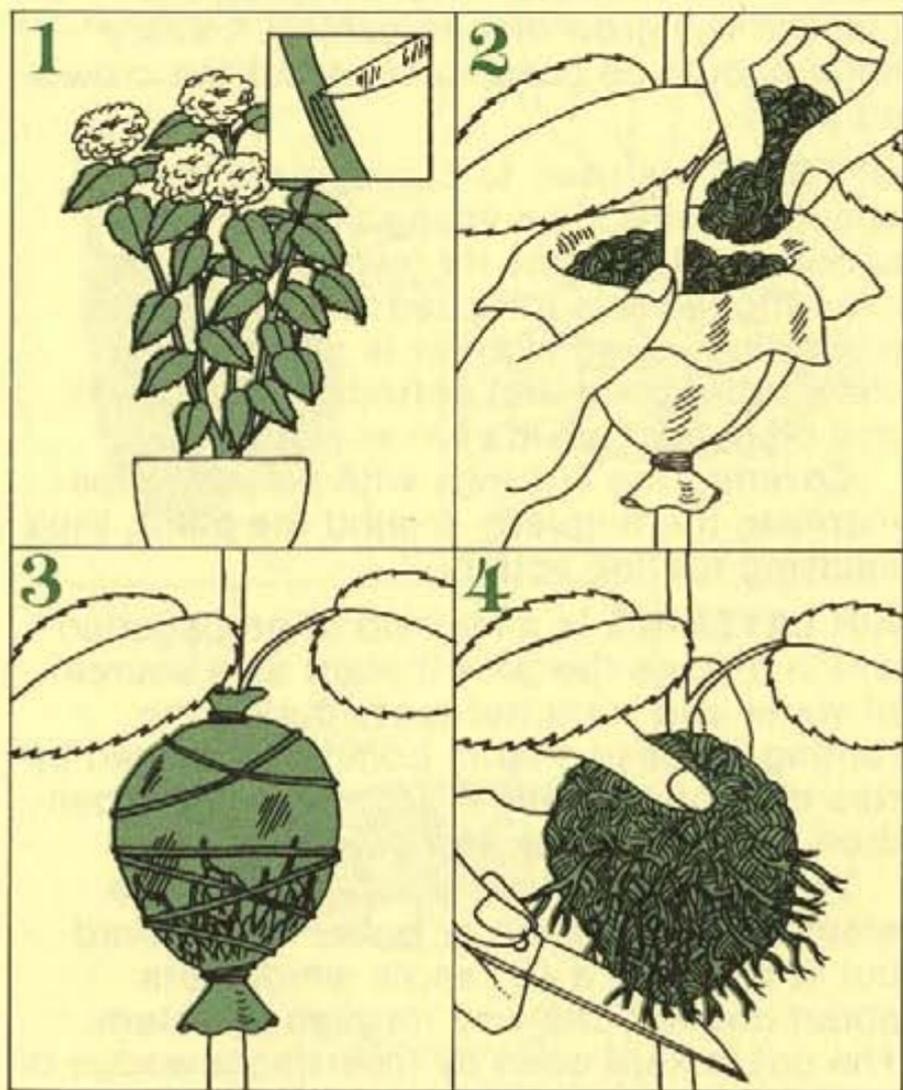
AIR LAYERING is a method of propagation which utilizes the parent plant as a source of water and plant nutrients during the rooting process. Plants commonly rooted by this method are Ficus, Schefflera, Philodendron, Dieffenbachia and Dracaena.

To air layer, make a slanted cut in the stem between nodes or buds. The upward cut is made on a 45° angle which cuts about one-half the way through the stem. The cut is kept open by inserting a wedge of

wood or stone.

The final processes for air layering are: dusting the wound with rooting hormone and wrapping the wound with sphagnum moss. The moss should be only moist and not excessively wet. It can be fastened in place with string. The final step is to wrap the outside with a plastic sheet six by eight inches, or aluminum foil cut to size. The top of the plastic should be fastened securely to the stem with masking tape to prevent the moss from drying.

Once the top is well rooted it is cut from the parent plant below the wound. Roots will be observable through the moss at this time. The cutting should be planted in a good growing mix. Before potting, remove the plastic or aluminum foil wrap from the root area. The remaining stem above can be cut into sections and rooted as canes.



INSECTS

House plants are very susceptible to insect problems. Be sure that when you purchase new plants, receive plants as gifts, or bring plants in from outside that they are free of pests. Inspect plants closely on a regular basis to insure they remain that way.

Showering or washing the plant will help keep the insect population at a low level. If you just have a few plants that are infected use a cotton swab dipped in alcohol to remove the insects. Washing the leaves with warm, soapy water also is effective.

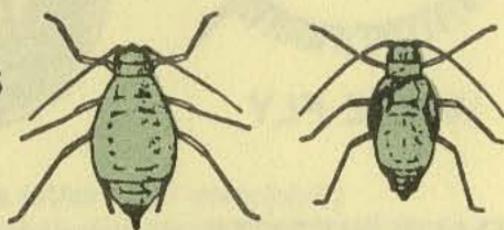
If you cannot control the insects by these methods, then you might wish to discard the plant or use an insecticide.

If you elect to use an insecticide, first identify the insect then read and follow the label on the container carefully. Repeat the spray three times at seven to ten day intervals. Plants should be sprayed outdoors if possible and never spray plants when they are wilted or during the hottest part of the day. Do not use any insecticide on ferns, unless the label specifies that it will not hurt the plant.

CHECK YOUR PLANTS FOR THESE PESTS

APHIDS are tiny green, orange, or black plant-lice which live along the areas of new growth and under new leaves. As they suck juices from the plant, they distort the growing plant tissues.

APHIDS

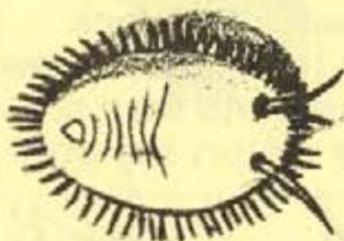


MEALYBUGS are pinkish crawlers which are dusted white. They hide in the junction of stem and leaf or under leaves along the midrib, often in a waxy, white, cottony mass. Mealybugs also distort and damage leaves.

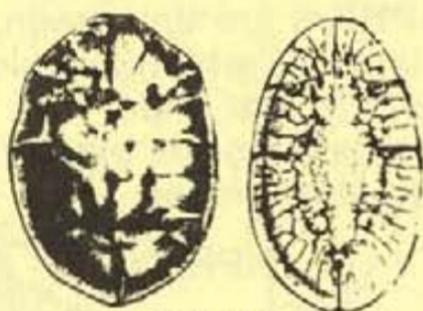
(RED) SPIDER MITES are minute spider-like mites difficult to see without a hand lens. It is easier to see cottony, gauzy webs on the underside of leaves or on and around the new leaves at the stem tip. Spider mites cause tiny yellow spots or a mottled appearance on upper leaf surfaces and slow defoliation. Infestations increase greatly in warm, dry conditions.



WHITE FLIES are tiny moth-like pests with white bodies and wings. They swarm and make a white cloud around the plant when disturbed. White flies cause some damage to plants by sucking juices from the plant but are mainly a nuisance pest.



WHITE FLY



SCALE

SCALE INSECTS are small stationary insects with turtle-shaped or shield-like bodies. The many types of scale may be found along young stems and under leaves. Scale insects cause injury to houseplants that is similar to aphid and mealybug damage because of their sucking mouthparts.

SYMPTOMS

CAUSE

- overwatering
- underwatering
- overfertilization
- underfertilization
- compact/soil pot bound
- insects
- poor light
- excess light
- low humidity
- disease
- excess salts
- low temperature
- high temperature
- quick temperature change
- quick light change

wilting	✓	✓	✓	✓					✓	✓	✓				
lower leaves yellow	✓	✓		✓	✓	✓	✓	✓					✓	✓	
all leaves yellow	✓			✓			✓	✓							
root rot	✓		✓						✓	✓					
leaves small				✓			✓	✓							
brown leaf tips/margins	✓	✓	✓		✓			✓	✓	✓	✓	✓	✓	✓	
black, brown leaf spots	✓		✓		✓		✓	✓	✓			✓	✓		
little or no new growth	✓	✓		✓	✓		✓	✓		✓	✓	✓			
bud/flower drop	✓					✓	✓	✓					✓	✓	✓
leaf drop	✓		✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	
pale leaves, spindly growth				✓			✓						✓		
blackening of new growth									✓	✓	FROZEN				

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