

INDOOR PLANTS
IDENTIFICATION AND CULTURE,

by

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INTRODUCTION

With the introduction and expansion of vocational horticulture courses in the secondary school systems, it has become necessary to teach more specialized work in the area of floriculture and particularly house plant identification and culture. The increasing interest of individuals and the growing need for extension services concerning indoor plant identification and culture have also demanded that educational materials and services be made available for use by the average citizen and extension agents, as well as the horticulture instructor.

The educational kit that will be described in this thesis has been prepared for the purpose of identifying numerous indoor plants, their cultural requirements, and uses. This may provide a basis for further intensified studies in this area. This unit consisting of slides and a forty-five minute tape should not be considered to be inclusive. Expansion should be done by the horticulture instructor or the county agent to adjust this to his locality and to meet the needs of his students.

The problem with developing a teaching unit or instructional kit is to design it in a way that will meet the needs of everyone concerned. Realizing that this is impossible, an attempt has been made to develop this unit in a manner that will allow for numerous modifications. Some suggestions for the modifications will be detailed later.

REVIEW OF LITERATURE

At the outset of the development of this project, correspondence was sent to all vocational horticulture departments in Virginia to determine if the instructors needed additional educational material, particularly an instructional kit identifying indoor plants and their cultural requirements. Seventy percent of the instructors returned the correspondence and one hundred percent of those returned stated they would purchase the instructional kit.

Several major universities, especially those noted for their availability of curriculum materials, were found to have developed no slide sets that included indoor plants. Some, however, had slides of indoor plants, but these were within a set that also included other horticultural plants. And still other universities had no curriculum materials related to indoor plant identification. No university was found to have taped recordings accompanying their slide sets that identified indoor plants and their cultural requirements.

California Polytechnic State University has developed a filmstrip, taped narration, and script entitled Plant Identification: Annuals, Perennials, and House Plants. The instructional kit costs \$14.95 and can be ordered from Vocational Education Productions, California Polytechnic State University, San Louis Obispo, California, 93401.

Ohio State offers a slide series entitled Floricultural Crops that relates to indoor plants to a limited extent.

Lesson plans and laboratory exercises for pre-employment laboratory training are available from Vocational Instructional Services, F.E. Box 182, College Station, Texas, 77843. This eight page package entitled Foliage Plant Identification contains plant terms, a plant list, and student exercises for arranging foliage plants.

A three part slidefilm for identifying foliage plants can be ordered from Vocational Agriculture Service, College of Agriculture, University of Illinois, 434 Mumford Hall, Urbana, Illinois, 61801. Each part of the slidefilm consists of 49-55 color frames and has a supplementary practice set of 39 frames that can also be ordered.

From the correspondence that was received and the review of curriculum materials that was available from many universities, it was determined that there was indeed a need for an instructional package to be developed in this area.

MATERIALS AND METHODS

Realizing that this instructional package should be designed in a manner that would allow it to effectively meet the needs of both instructors of vocational horticulture and extension agents, several authorities were asked to offer suggestions as to the design of this package. Designers of curriculum materials, media technicians, photographers, and horticulture instructors were consulted.

There was an agreement that the number of slides and length of script and tape recording were critical if this unit was to be used effectively. Efforts were made to break the unit into smaller segments to allow its use over several short intervals. These efforts failed when no effective grouping of the plant material could be arranged. The decision was then made by the consultees and the author to put all the plant material into one unit, but to arrange that unit so that it could be manipulated by the user in numerous ways to allow it to meet the needs of the occasion. In other words, there would be no "beeps," either audible or inaudible, but a five second interval between slides to allow for stopping the tape.

To create the greatest educational impact, the Botanical and Common names, plus light, temperature, and moisture requirements of each plant were superimposed on the slides. This involved a process of photographing type from directory cards and developing the negative from which a positive was made and mounted in the same frame with the slide of the

appropriate plant material. This allows the viewer to visualize a particular plant, its names, and cultural requirements together on the screen.

Slides of the plant material were photographed with the use of a solid colored contrasting background, 35mm camera and film, and often flood lamps. Efforts were made to get typical healthy specimens that illustrated the true color and growth pattern of each plant.

The tape recording and script were designed to average approximately thirty seconds of information for each plant, describing some of the plant's unique characteristics and uses.

Virginia Polytechnic Institute and State University's photography lab and radio services were responsible for the superimposing work and taping of the script. A commercial company developed the film of the plant material.

Upon being assembled, this instructional kit was viewed by several faculty members for their recommendations on how to improve the quality of the kit. Several suggestions were received and were incorporated into the kit in its final stages of development.

RESULTS

Indoor Plants

This slide set concerning indoor plants has been prepared by the Horticulture staff at Virginia Tech. The purpose of these slides is to acquaint the viewer with some of the most common indoor plants, their cultural requirements, and their uses.

Three points to be emphasized are:

1. This is only a selection of indoor plants.
2. The most widely used names will be shown. Some authorities have various names for the same plants.
3. The most desirable cultural conditions are listed, however, most plants will grow under environmental conditions other than those listed.

Peperomia obtusifolia

Pepper-face *Peperomia* (variegated & regular)

Dry/82 degrees/filtered sunlight

Peperomias are well suited to culture indoors. They range from plants with a vining habit and small leaves to upright bushes with large heavy leaves. They can be propagated by stem cuttings of the vine type, by leaf cuttings of other types, and by seed. The trailing growth pattern of the *peperomia* shown here makes it suitable for hanging baskets and climbing arrangements.

Peperomia caperata

Ivy-*Peperomia*

Dry/82 degrees/filtered sunlight

The ivy *peperomia* has a rosette growth pattern differing from the pepper-face species; however, their cultural requirements are identical. The crinkly dark green leaves and rosetted growth make it useful in dish gardens and small planters.

Peperomia sandersii

Watermelon Plant

Dry/82 degrees/filtered sunlight

Also known as the Rugby football plant, this plant gets its name from the coloration of the leaves. Like all other *peperomias* it requires a minimum of watering and grows best in filtered sunlight. Its uses are similar to those for the ivy *peperomia*, and they both can be slowly propagated by leaf petiole cuttings.

Pilea cadierei

Aluminum Plant

Moist/82 degrees/filtered sunlight

This twelve inch tall plant gets its name from the aluminum colored spots on its leaves. The aluminum plant should be cut back every spring in order to produce a compact plant and provide cuttings for propagation.

Pilea cadierei

Friendship Plant

Moist/82 degrees/filtered sunlight

The friendship plant is another variety of the *cadierei* species. It, like all other pileas, grows best in a moist medium and filtered sunlight. Its unusual leaf shape and color make it useful along with the aluminum plant in dish gardens among other small plants.

Begonia semperflorens

Wax Begonia

Moist/82 degrees/filtered sunlight

No genus offers more variation of color, size, and cultural requirements than does the begonia. From the 900 or so species a group of some half dozen will give you an array of color and decorative foliage throughout the year. The Wax Begonia can be used as a bedding plant outdoors and as an indoor specimen flowering plant. The following slides will provide some examples of the many variations that exist between begonias.

Begonia spp.

Maple or Star-leaf Begonia

Moist/82 degrees/filtered sunlight

They have a ground-level stem which creeps over the media sending down shallow roots and producing leaf and flower-stems. The blooms generally appear high above the foliage in late winter and spring. Propagation is by stem cuttings, more commonly done by rooting leaf sections.

Begonia spp.

Beefsteak Begonia

Moist/82 degrees/filtered sunlight

The beefsteak begonia wears a coat of bristly or velvety hair on its leaves and outside the flower's petals. It can be propagated by stem cuttings or leaf sections.

Begonia corallina

Angel-wing Begonia

Moist/82 degrees/filtered sunlight

Unless the growing tips of the angel-wing begonia are pinched out, the plant may grow to a height of six feet. The plant is also noted for its large wing-shaped leaves which will drop if the medium in which it grows is kept too moist.

Begonia rex

Rex Begonia

Moist/82 degrees/filtered sunlight

The Rex can be found in a wide array of color combinations that make it useful as a specimen plant. As a rule they require more warmth and humidity than most other begonias, but less sunlight. They can be propagated by leaf and leaf section cuttings.

Begonia tuberhybrida

Tuberous Begonia Plant

Moist/82 degrees/filtered sunlight-shade

These plants are known best for their lovely, colorful flowers. They are primarily a summer flower for the garden or balcony box, but can also be cultivated as a summer flowering indoor plant in light and airy windows. Seeds, tubers, and cuttings are used for propagation.

Begonia elatior

Rieger Begonia

Moist/82 degrees/filtered sunlight

As a recent entrant into the begonia market, the Rieger has proven itself to be a constantly flowering plant that can be used as a specimen plant or in hanging baskets. They grow best in a warm soil condition with plenty of ventilation and sunlight. Strong sunlight is undesirable. The Reiger, like all begonias, are sensitive to over and underwatering.

Hoya carnosa

Wax Plant

Dry/70 degrees/full sun

Both the Wax Plant and it's variegated form are very sensitive to overwatering, but withstands most other adverse house conditions. They have flower stems that will produce flowers year after year on the same stem and are excellent as climbing specimens. Leaf-bud cuttings are the primary sources of propagation.

Fittonia argyroneura

Fittonia

Moist/82 degrees/filtered sunlight

Color foliage is the trademark of the Fittonia. Another species called *vershaffeltii* has red veins in its leaves. These plants require high humidity and are sensitive to watering. They can be propagated by tip cuttings and used in terrariums.

Aphelandra squarrosa louisae

Zebra Plant

Moist/82 degrees/filtered sunlight

Although classified as a flowering plant, its spectacular

terminal spike of waxy flowers is fully matched in beauty by its shiny emerald-green leaves, strikingly veined in white. Most of the *Aphelandras* have white or pale veins, and flower colors are predominantly orange-scarlet or yellow. They make excellent specimen plants and can be propagated by tip cuttings.

Impatiens sultanii

Impatiens

Moist/70 degrees/full sun

Outdoors in the summer, in a spot where there is partial to full shade, plants of *impatiens* are constantly flowering. Many strains are cultivated from seeds sown in midwinter, and thus brought to blooming size by warm weather. It is not unusual for some seedlings to bloom more profusely than others, and these can be carried over by rooting cuttings in late summer or early fall. The only real problem with *impatiens* is that red spider mites cannot resist them. The best control is high humidity and evenly moist soil at all times. They can be propagated easily by tip and stem cuttings.

Aechmea fasciata

Airpine

Moist/82 degrees/filtered sunlight

The most versatile and durable plants available to the home owner today, come in a wide range of form and color. The Airpine, which is a bromeliad is almost easier to keep than cacti, and they will stand neglect better than any plant and still live. Under cool temperatures, the flower which is a showy spike with feathery rose-pink bracts, may keep its color for six months. If plants are mature and not blooming, they can be forced to flower by applying ethylene gas. Ethylene gas is released by ripening apples. Place a plastic bag around the plant with an apple inside and close the bag for

about four days. Response to ethylene can be noticed within weeks. Propagate them by offsets and seed.

Vriesia splendens

Flaming sword

Dry/72 degrees/filtered sunlight

The red flower spike which looks like a flaming sword is the source of this plant's name. *Vriesias*, *Aechmeas*, and the following bromeliad grow best if provided with a medium consisting of sand, bark, and peat. The flaming sword like most other bromeliads has colorful foliage that makes it attractive even without flowers.

Neoregelia carolinae

Tri-colored Bromeliad

Moist/82 degrees/filtered sunlight

This plant has broad green leaves grouped around a brilliant red center cup that is formed by the leaves' bases. The colorful center foliage makes it a good specimen plant or center piece. *Neoregelias* like a higher temperature and more shade than bromeliads, but should otherwise be treated like *Aechmeas*.

Asplenium nidus

Birdnest fern

Wet/70 degrees/shady

This plant lacks the lacy charm usually associated with ferns, but it is a durable fern for indoor use. The two to four feet fronds converge at the base in a tight nest-like rosette to give the fern its name birdnest. It is usually propagated by offsets and does well in large floor containers as a specimen plant.

Adiantum capillus veneris

Maidenhair fern

Wet/82 degrees/shady

Aidantum or maidenhair ferns are distinguished by having thin, wiry, black stems and many small, firm leaflets with wedge-shaped bases. It is the old green house favorite. Maidenhair ferns are moisture-loving plants. They need high humidity and wet soil, the latter humusy. Peat moss, sand, or shredded fir bark are all good potting mediums for these plants as their fine roots need a soft, easily penetrated material which will hold ample moisture yet permit air to enter freely. Most authorities state that maidenhair ferns need temperatures ranging from sixty-five degrees (nighttime) to 85 degrees (daytime), yet these ferns grow rampant beside a mountain stream in Mexico which is too cold for the comfort of a heavy-coated human. These ferns need to be rested slightly during the winter months by cutting down watering, and moving to a cool place. Propagate them by dividing the plants.

Platycerium veitchii

Staghorn fern

Moist/82 degrees/filtered sunlight

A coarse textured fern with forked fronds, it can be grown on osmunda fern roots in pots or on slabs of wood. Immerse the root system in a pail of lukewarm water for about ten minutes once or twice a week depending on the humidity and temperature of the room. Allow excess water to drain before placing the plant back. Brown areas may appear on the underside of mature leaves at the tips. These are sporangia which produce spores and which produce spores that are normal and not harmful. Do not wipe off the grayish layer on the surface of the leaves. If the leaves are attacked by scale, remove them by hand and wash the leaves off. Ferns are very susceptible to damage from the use of insecticides.

Nephrolepis exaltata

Boston fern

Moist/70 degrees/filtered sunlight

Once the old standby of indoor gardens, it has now returned to the market as a valuable and widely sought fern. The Boston fern's rapid growth make it possible to propagate the plant often by division of the parent plant. Care should be taken to lessen heat and provide more humidity if the frond edges turn brown.

Chlorophytum elatum vittatum

Spider Plant

Moist/70 degrees/filtered sunlight

A member of the lily family, it has white-striped leaves with informal rosettes of daylily-like foliage. All send up tall, slender racemes of small white flowers which are followed later by new plants, thus giving rise to the popular names "airplane plant" and "spider plant." As soon as the weight of the new plants is great enough, the stem will bend over, and if it comes in contact with soil, prompt rooting occurs; after a few weeks the stolen may then be cut away. It can also be propagated by division and is used in hanging baskets or expensive dish gardens.

Sansevieria trifasciata

Snake Plant

Dry/72 degrees/filtered sunlight

The leaves may be plain green, cross banded with lighter or darker shades of green or banded or margined with white or yellow. Occasionally they send up tall, showy, arching spikes crowded with small greenish white, fragrant flowers. Propagate by division of the creeping rootstock, or by inserting three

inch sections of the leaves to half their length in sandy soil. This should be only used with the green-leaved plants, the plants with yellow margins will not come true by leaf cuttings. Sanseverias are used for any interior use except in planters with other plants that require frequent watering. Excellent in planter boxes and in narrow boxes with restricted area for roots such as room dividers.

Sansevieria hahnii

Bird's Nest

Dry/72 degrees/filtered sunlight

This rosetted sansevieria may reach eight inches in height. Its unique shape and size make it useful in dish gardens and terrariums. The propagation procedure is the same as for the snake plant.

Dracaena deremensis warneckei

Warneck's Dracaena

Moist/82 degrees/filtered sunlight

Most dracaenas are decorative foliage plants with sword shaped leaves growing from cane-like stems. The leaves on the warneckei may reach eighteen inches in length. Most are propagated by stem cuttings or root division and are used for dish gardens or interior planter boxes.

Dracaena marginata

Marginate Dracaena

Moist/82 degrees/filtered sunlight

The major difference between marginata and other dracaenas is its red margin on its leaves. This coloration makes it useful as a specimen plant in addition to many other uses.

Dracaena godseffiana

Golddust

Moist/82 degrees/filtered sunlight

This plant and its numerous varieties display an entirely different growth habit from the dracaenas previously described. These are mostly small plants, inclined to be shrubby, irregularly marked with yellow or white. Their growth is weak, which is why 3 - 5 plants are frequently planted together in one pot.

Asparagus sprengeri

Asparagus fern

Moist/70 degrees/filtered sunlight

This asparagus specie and the two that will follow are not true ferns, but get their names from their fine, fern-like growth. The sprengeri, bearing its inch-long needles of bright green on thorny stems, also has small, fragrant white flowers that are followed by showy red berries.

Asparagus meyeri

Asparagus fern

Moist/70 degrees/filtered sunlight

Meyeri, like sprengeri, can be propagated by sowing seeds or dividing the clumps in spring or fall. It is outstandingly decorative and well suited to hanging baskets.

Asparagus plumosus

Asparagus fern

Moist/70 degrees/filtered sunlight

Growing naturally as a climber, plumosus can be kept in cultivation as a small clump of exceedingly fine, fern-like growth. It is this foliage which so often comes with roses

from the florist. Black berries often follow its flowers. Dish gardens and terrariums are some uses of the plumosus.

Maranta leuconeura kerchoveana

Prayer Plant

Moist/82 degrees/filtered sunlight

An eight inch high foliage plant, with green, oval leaves which have pairs of dark green spots on both sides of the midrib. On young leaves the markings are olive green or brown. The leaf veins stand out and are silvery gray like fishbones. During the evening and night, the leaves turn themselves in pairs into a vertical sleeping position. The plant is usually propagated by division and can be used as a center piece or specimen plant.

Maranta leuconeura massangeana

Prayer Plant

Moist/82 degrees/filtered sunlight

The pink veins, varying shades of green and brown underside of the leaves, are the only differences between this plant and the one just shown.

Schlumbergera bridgesii

Christmas Cactus

Moist/60-70 degrees/filtered sunlight

To insure flowering, it requires long nights or periods of darkness at least twelve hours long. Cool temperatures will also help to insure flowering; if temperatures are too warm, it will not flower regardless of length of dark period. Propagate by stem tip cuttings. Place plants outside during summer months, in the shade. It should be used as a flowering plant and is especially attractive in hanging baskets.

Aglaonema modestum
 Chinese Evergreen
 Moist/82 degrees/shady

Aglaonemas are some of the best plants we have for low light conditions. Many of them resemble the dumbcanes somewhat, but they are more durable and only reach a height of about 1 1/2 feet. Their size and durability allow them to do well in dish gardens and small planters.

Aglaonema hospitum
Aglaonema
 Moist/82 degrees/shady

Most all aglaonemas like 30% or more relative humidity, and hospitum is no exception. They also grow best if kept moist at all times. Some can even be grown in water.

Aglaonema treubii
Aglaonema Silver Queen
 Moist/82 degrees/shady

Displaying a large amount of variegation, silver queen is one of the most popular aglaonemas. It can be propagated like most aglaonemas by cane cuttings.

Anthurium andreanum rubrum
 Flamingo Plant
 Wet/82 degrees/shady

Grown in Hawaii it is known for its large durable showy flowers which are used in flower arrangements. Humid air and partial shade are preferred. Use half soil and half sphagnum moss for the soil mix, and keep it moist. Propagate the plant by suckers or seeds. It can be used as an accent point in planters when in bloom and also as a specimen plant.

Monstera friedrichstalii

Monstera

Moist/82 degrees/ filtered sunlight

Although this plant's leaves resemble those of *deliciosa* and *petusum*, they are much smaller and grow on small vines that climb so vigorously that they usually need help in attaching themselves to totem poles or walls. *Friedrichstalii* do not grow as well as *deliciosa* in the average home.

Monstera deliciosa

Cut-leaf *Philodendron*

Moist/82 degrees/filtered sunlight

Monstera deliciosa and *monstera petusum* are often confused. *Petusum* is simply the smaller size of plant. They are both a vining plant with leathery leaves variously cut and perforated. Thick aerial roots give the plants a means by which to climb. Sometimes these reach down to the soil, or a moss-covered totem pole may be provided. Leaves get up to 3 ft. long. *Deliciosa* refers to the edible fruit. Only the mature leaves have holes.

Philodendron panduraeforme

Fiddle-leaf *Philodendron*

Moist/82 degrees/filtered sunlight

There are many vining *Philodendron*, and *panduraeforme* is one of the hardier species. Its unusual leaf shape make it one of the most widely used foliage plants. It can be seen in dish gardens, planters, boxes, and tubs. The size of its leaves vary from 3 - 15 inches in length depending on the cultural conditions to which the plant has been exposed.

Philodendron selloum

Philodendron

Moist/82 degrees/filtered sunlight

Also known as "Tree Philodendron" or "Saddle-leaf Philodendron" it is one of the few self-heading philodendron. Most are vines. *Philodendron selloum* closely resembles *Monstera deliciosa* when it is young. When mature it's leaves become deeply lobed and eventually grow 12 - 20 inches long and 10 - 14 inches wide. If grown under optimum conditions, it will effectively fill an entire corner and can be used as a specimen plant. Commercial establishments often use *Philodendron selloum* for interior decoration.

Philodendron oxycardium

Heart-leaf Philodendron

Moist/82 degrees/filtered sunlight

Philodendron scandens is the correct name of this plant, but it is more readily known as *oxycardium* or *cordatum*. Whatever the name, this is probably the most used foliage plant in the United States. The heart-leaf philodendron is one of the sturdiest plants adapted to growing in homes. It will accept full sun or dim light, endure high or low temperatures, and can withstand periods without water, and yet some will live and often grow in a glass of water.

Syngonium podophyllum

Nephtytus Arrowhead

Moist/82 degrees/filtered sunlight

This plant is also known as the "goosefoot plant." It is a vine type foliage plant with long petioles. Whenever climbing or creeping plants are needed the *syngoniums* are excellent. They are widely used as indoor foliage plants and will add decor to any interior setting.

Syngonium xanthophyllum

Green Gold

Moist/82 degrees/filtered sunlight

The only difference between green gold and *nephthytus* is its three to five fingered leaves having spear shaped lobes. They can both be propagated by stem cuttings, division, and by seed.

Dieffenbachia amoena

Dumbcane

Moist - Dry/82 degrees/filtered sunlight

The *Dieffenbachias* are known as dumbcanes because the acrid juice will cause swelling and partial paralysis of the tongue if placed in contact with it. The plants are shrubby, thick-stemmed, with long, pointed, oblong leaves ascending spirally around the canes. Too much sun will burn the leaves, but too much shade will cause them to be poorly colored. Too much water may drown the fleshy roots or cause rank, weak growth. Well-grown plants have stout stems, completely hidden by the bases of the leaf petioles where they clasp, but exposed below where older leaves have fallen. The only frequent complaint about *Dieffenbachias* is that they have bare stems with only a small tuft of leaves at the top after a certain age. This is more or less normal and the resulting tree-like form is not unattractive. However, to shorten a plant, or simply to eliminate the bare stem, air layer it, or propagate in the spring or summer using 4-inch stem sections, half-buried lengthwise in moist sphagnum moss.

Dieffenbachia picta

Yellow-leaf Dumbcane

Moist - Dry/82 degrees/filtered sunlight

Dieffenbachia picta possesses the yellow variegation not present

in amoena. They both will grow to a height of six to eight feet or more and are used in indoor planters and as specimen plants.

Scindapsus aureus

Marble Queen - Pothos

Moist/82 degrees/filtered sunlight

At maturity and under satisfactory growing conditions pothos have leaves two feet long, cut and perforated like those of monstera. Follow the same culture as for philodendron, except the scindapsus plants need to become nearly dry between waterings. In addition, they show a marked preference for warm temperatures. Abundant light tends to increase foliage variation. Propagation is by cuttings from sections of the stem with aerial roots are potted in sand and sphagnum moss.

Scindapsus aureus

Golden Pothos

Moist/82 degrees/filtered sunlight

Pothos seldom reach their mature size when grown in most homes. They usually reach the size of a philodendron scandens or slightly larger. They are, therefore, better suited as large or tall totem poles or large specimen vines for shelves or ledges. Pothos tend to lose leaves or develop brown and yellow spots when not grown in fairly dry, well drained soil.

Dizygotheca elegantissima

False Aralia

Moist/82 degrees/filtered sunlight

This specimen plant is often sold as the "marijuana plant" because of the resemblance of their leaves. It's one of those tricky specimens like the Boston Fern which is difficult to

grow successfully. If the soil is too dry or too wet, it will drop its foliage. As it matures, it drops its lower leaves and attains a tree-like appearance. Actually it is a tree growing to heights of 15 - 20 feet in its native habitat (even in Florida and California). Indoors; however, five to six feet is about maximum. Propagation is by seeds, air layering, and cuttings. Mealy bugs love them.

Ficus elastica decora

Broadleaved Rubber Plant

Moist/82 degrees/filtered sunlight

This is one of the most popular house plants in America. It has survived over the years as a household favorite because it is virtually indestructible. It takes in stride both overwatering and underwatering and is virtually disease and insect free, although scale sometimes is a problem. Decora grows well in dark corners or sunny windows. The original strain came from India where it attained heights of 30 feet and more. Its dark green, leathery oval leaves which at maturity, are five to ten inches long and four to six inches across, grow from a red sheath which turns brown and usually drops off. If this sheath fails to drop, it should be removed by hand or it may cause the new leaf to rot. One of the primary objections many people have to the *Ficus decora* is that it soon becomes leggy by dropping its lower leaves as new foliage emerges. To some extent, this is a natural phenomenon, but overwatering can hasten the process. One technique which sometimes encourages branching and/or retention of lower leaves, is pinching out the new leaves at the growing tip before they open. An alternative is to air layer the plant and start again. Because the rubber plant has a tendency to become leggy, it is always a good idea to pot up three plants in one pot. As they grow together, the foliage mass gives the appearance of a single, lush, full specimen.

Saint paulia ionantha

African Violet

Moist/82 degrees/filtered sunlight

African violet flowers may be single, semi-double, fringed or ruffled on the edge, and in varying shades of blue, pink, lavender, wine, purple, and white. The bicolors have two shades of the same color; multicolors have more than two colors per flower. And there are novelties with star-shaped flowers, or petals bordered with another color, or contrastingly streaked and splashed. It is easy to understand why African violets are popular, for these plants will flower not just during one annual season, but off and on all year long. They take up little space, and they keep healthy and contented without a great deal of fuss and trouble. But don't let the popular name mislead you. They are not violets, and they do not grow like the "Russian" or "English" violets as we know them. Rather, take "African" as a clue to their culture, and try to give them growing conditions similar to their tropical homelands. Be careful not to pour water onto the foliage when watering these plants.

Episcia reptans

Flame Violet

Moist/82 degrees/filtered sunlight

Episcias are luxuriant foliage plants, handsome with or without flowers. The first species to attract the attention of commerce was reptans and promoted as the "flame violet." Its pebble-surface, bronzy leaves with distinctive green or silver veining have become a familiar sight wherever tropical plants are grown. Today there are dozens of other episcia species and cultivars available. You may choose leaves with contrasting veins or zones and hairy or smooth surfaces. The flowers may be white, yellow, pink, red, blue, or lavender: plain, spotted, marked, or lined. Episcia flowers are fringed, some

more noticeably than others. Episcias are displayed best from a shelf or hanging basket. They grow strawberry-like stolens one after the other, and soon these produce a magnificent cascade of foliage unequalled by any other plant. The effect is highlighted by the blossoms which arise in the leaf axils, in some varieties only seasonally, others almost constantly. If room does not permit fullest spreading for episcias, they may be kept cut back into a rounded, bushy form. Root the plantlets along the cut-off stolens by pinning them to moist soil.

Gynura aurantiaca

Velvet Plant

Moist/82 degrees/full sun

Gynura is a branchy plant with leaves and stems completely overlaid with short, close-set, vivid purple hairs. This feature has been both its salvation and its downfall--salvation because it provides the beauty which keeps people trying to grow it, and downfall because the hairs give a fragile look which results in too much pampering. Remember the *Gynura* is a composite, which means that in season you may see typical yellow daisies on it whose relatives include such sun-worshippers as true sunflowers, daisies, and marigolds. While this family does have a few members which prefer partial shade, *Gynura* is not one of them. Propagate it by cuttings, and prune the plant when it is young to eliminate spindly single stem development.

Crassula argentea

Jade Plant

Dry/70 degrees/filtered sunlight

Known as a favorite for the succulent dish garden, *Crassula argentea* is now gaining popularity as a large, easy-maintenance house plant. It resembles a miniature tree with its

thick, fleshy trunk and branch structure, and produces small, oval, jade-colored leaves which are tinged with red around the perimeter. Very old specimens often grow four feet high and almost as wide. On rare occasions, a specimen which has received ideal treatment will produce clusters of pink flowers from about October to spring, but this only occurs when the plant is growing outdoors. Since the Jade Plant is a shallow-rooted plant, it may need some staking if the foliage gets topheavy. Fanciers of this plant usually prune out wandering branches to keep the plant symmetrical. These, along with individual leaves, can be rooted in sand to create new plants. Don't bury the rooted branches; just the roots. When repotting, take care to maintain the previous soil level against the trunk. If the soil level is higher, the trunk may rot. Propagate the plant by seeds, and leaf or stem cuttings.

Crassula argentea variegata

Dollar Plant

Dry/70 degrees/filtered sunlight

This is the variegated form of the Jade plant. The white or yellow colors that mix with the green make it an attractive specimen.

Kalanchoe daigremontiana

Bryophyllum

Dry/70 degrees/full sun

Also known as the Mother of Thousands, this *Kalanchoe* forms plantlets along the leaf edge. These plantlets make it useful as a demonstration plant in types of propagation. It can be propagated by planting these naturally formed plantlets, by sowing seed in the spring, or by tip cuttings.

Hippeastrum spp.

Amaryllis

Moist-Dry/75 degrees/full sunlight

Hippeastrum vittatum is the plant from which most of today's popular forms of amaryllis originated. These are the easiest, the showiest, and probably the most favored of all pot-grown bulbs. Hybrids of Dutch, American, or South African strains are available. Good cultivars sell for around five dollars. Flowers of all tend toward lily shape, and are composed of three outer and three inner segments which are nearly equal in size and equidistant from each other, though often not identically marked. They are borne atop stout scapes, usually in clusters of from two to five. In color, the flowers may be pure white or of pink or red tones, including salmon, wine-red and violet-rose; they may have throats of lighter or deeper tones, or they may be banded, striped, or bordered in contrasting color. Many times a single bulb will send up as many as three scapes, resulting in a magnificent, long-lasting display. Hybrid amaryllis may fail to bloom if growing conditions do not promote at least four to six healthy new leaves during the spring and summer. Propagate them by removing and planting offsets or by sowing seed. Seedlings reach maturity in two to three years.

Saxifraga sarmentosa

Strawberry Begonia

Dry/60 degrees/full sunlight

Unaccountably, this plant has numerous popular names, some very misleading. "Strawberry geranium," "creeping sailor," and "mother of thousands" are some of the more readily used common names. Its olive green leaves, patterned with grey areas along the veins, and spotted purple, beneath, make it a popular plant that is easy to grow. Propagation is by the plantlets which form at the end of its red runners.

Pelargonium peltatum

Ivy-leaf Geranium

Dry/70 degrees/full sunlight

Pelargoniums are delightfully attractive and often showy plants whose different species and hybrids offer a great variety of size, shape, and color. Many of them flower for months if grown under adequate light conditions and some have aromatic leaves. Pelargoniums fall into three main groups: the zonal pelargoniums (including the fancy-leaved variegated types), the Regal pelargoniums, and the Ivy-leaved pelargoniums.

Codiaeum spp.

Croton

Moist/82 degrees/full sunlight

Species and varieties of *Codiaeum*, are a source of equal parts pleasure and anguish to the indoor gardener. If kept warm and humid, given enough sunlight to color well, and enough fresh air circulation to reduce red spider mite attacks, crotons are outstanding as colorful foliage plants. However, if any phase of culture is not agreeable, they may drop their leaves within a matter of hours. Thirty percent or more humidity and air circulation are desirable. Propagate from cuttings whenever warmth and high humidity can be provided.

Euphorbia splendens

Crown of Thorns

Moist/70 degrees/full sunlight

This is the only species of *Euphorbia* widely cultivated by indoor gardeners other than the Christmas poinsettia. It has short-lived leaves and stems covered with stout, gray spines. The floral bracts are $\frac{1}{2}$ to 1 inch across and usually rosey red. The history of this plant is said to have begun with the

crucifixion of Jesus Christ as the crown of thorns that was placed on his head. The plant is believed to have began producing its rosey red bracts immediately after the crucifixion.

Euphorbia pulcherrima

Poinsettia

Moist/70 degrees/full sunlight

With its spectacular brilliant red bracts, the Poinsettia deserves its immense popularity. After being introduced to the United States by J.R. Poinsett in 1825, this plant began to be further developed by Albert Ecke in the early 1900's and more recently by Paul Mikkelsen. Poinsettias can be grown in varying shapes, sizes, and with red, pink, or white bracts. They are usually propagated from stem cuttings.

Hedera helix variegata

Variegated English Ivy

Moist/70 degrees/full sunlight

Hederas are trailing plants and are available in about seventy varieties. These include kinds with large leaves, small leaves, some five-lobed, others three-lobed, several with ruffled or marginally curled edges, and numerous kinds with white or yellow variegation. The ivys are grown both indoors and outdoors. They are often seen climbing attached to brick walls, trees, or fences. Propagation by cuttings can be done at anytime.

Schefflera actinophylla

Umbrella Tree

Dry/82 degrees/filtered sunlight

One of the most beautiful of all house plants, the Schefflera is still among the top five in demand even after several years

of popularity. It does have one unfortunate drawback, and that is its susceptibility to spider mite infestation. The plant develops horizontal tiers of oval or elliptical leaves creating the effect of an open umbrella. Young specimens throw out six to seven leaves at the end of each branch, and after maturity, sixteen leaves, each of which is roughly two inches wide and 12" to 14" long. To frustrate its tendency to go leggy, selectively pinch out new leaf sets before they emerge. You can also cut back the stem successfully. The plant recovers nicely. The umbrella tree is commercially propagated by seeds, but half-ripened stem cuttings are used by the hobbiest.

Araucaria excelsa

Norfolk Island Pine

Moist/70 degrees/filtered sunlight

A native of Norfolk Island in the South Pacific, this beautiful evergreen member of the pine family is seldom grown indoors because of the natural assumption that pines do not thrive indoors. This one does. It's a slow-grower, but eventually develops into a dramatic, stylized, living Christmas tree with branches densely covered with half-inch long needles. On its native island, this pine reaches a height of 200 feet, but in captivity 2 - 5 feet is more likely. Propagation is from seeds or by rooting the top leader of an old plant.

Coleus blumei

Coleus

Moist/82 degrees/full sunlight

The most common *Coleus* species is the *blumei* and its varieties. The extraordinary variegations of color on these plants make them more useful as a bedding plant. The multitude of colors combined with green appear more effective when the plants are grouped or contrasted together. Buds of their insignificant flowers should be pinched out to give a bushy shape.

Fuchsia hybrida

Fuchsia

Moist/70 degrees/filtered sunlight

The correct way to spell fuchsia is F-U-C-H-S-I-A. As a house plant, fuchsias may be difficult or easy to grow, depending on who you ask. There are many varieties and hybrids available, offering tall, short or trailing plants with flowers of various colors and structures.

Aeschynanthus lobbianus

Lipstick Plant

Moist/82 degrees/filtered sunlight

This genus contains attractive plants with thick, deep green foliage, and flowers which are striking in color as well as shape. Its bright red, tubular flowers, mounted on long hanging stems, makes the plant useful in hanging baskets indoors. The plants are epiphytes in their native habitat in the East Indies, so they are usually grown in a soilless mixture indoors. Lack of enough humidity may cause them to drop their leaves and buds.

Plectranthus australus

Swedish Ivy

Moist/72 degrees/filtered sunlight

This vigorously growing plant is almost always used in a hanging container indoors. Extensive pruning and pinching may be necessary to develop a desirable compact form. Although numerous small pale blue or white flowers are produced, the plant is grown primarily for its lovely foliage.

Zebrina pendula

Wandering Jew

Dry/68 degrees/filtered sunlight

This plant is popular because of its strikingly variegated foliage and adaptability to household conditions. Zebrinas are at their best in a hanging basket.

Sinningia speciosa

Gloxinia

Moist/82 degrees/filtered sunlight

The large bell-shaped flowers of the gloxinia have made it deservedly popular. Its large and very brittle leaves are also attractive. Seeds and tubers are used most for propagating the gloxinia although it may be rooted from cuttings.

CONCLUDING DISCUSSION

This instructional kit was designed to present the viewer with a selection of the most common house plants. The author realizes that all of these plants will not be familiar to everyone everywhere. Some plants may be known by other names. Common names vary between locales, and floriculturists are known to have various species contradictions when naming plants, but there is almost total agreement concerning the genera to which a plant belongs.

The cultural requirements listed with each plant are the most desirable, but it should be remembered that these plants will grow under conditions other than those listed. The light requirements of a plant are given in general terms to allow for the varying light conditions that exist indoors, as sunlight and shadows intermingle. The temperature requirement is really not useful to the hobbyist, because house plants must live with whatever temperature the occupants of a home or office desire. Usually the temperature indoors will be around 68 to 70 degrees. The moisture requirements are divided into three groups. If a plant's requirement is for a dry medium, it can endure periods of drought without injury and should not be kept wet or moist. If its requirement is moist, the medium may be allowed to become dry between waterings. If the requirement is wet, the surface should be kept moist at all times. These stipulations can be justified

because a medium will hold more moisture farther below its surface near the roots.

Hopefully this work may enable the viewer to properly identify and become familiar with the cultural requirements of these and other indoor plants. One should not be expected to view this presentation and immediately be able to identify the plants. This package must be viewed at short intervals for several weeks to allow the student to gradually become familiar with the plant material. Only five to seven plants should be presented together for learning, and previously learned plant material should be reviewed often.

Beautiful plant specimens cannot be grown simply by learning their cultural requirements. Many hours of practice and patience are required to turn a thumb green.

SUMMARY

This instructional kit has been developed in the hope that it may be of value in teaching the identification and cultural requirements of indoor plants and for use by extension agents. Those who make use of this kit should be cognizant of the ever-changing needs of their students and constituents. The instructors and agents should continue to compile information on new plant material and add it to this selection. They should also remove parts that become obsolete or are not of interest and use to their viewers.

It is also the hope of the author that this work may provide a basis for expanding studies related to indoor plants and that other educators may use this, in some form, as a guide to formulate workbooks, lesson plans, and laboratory exercises in all areas of vocational horticulture.

One should realize that a large amount of time and money must be spent to develop any worthwhile instructional materials. The approximate cost of time and materials used in developing this kit was one thousand dollars.

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APPENDIX

Alphabetical listing of the indoor plants by genus:

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Alphabetical listing of the indoor plants by common name:

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Wax Plant	10
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VITA

Lacy Clyde Harold was born in Mt. Airy, North Carolina, May 20, 1951. He graduated from Blue Ridge High School, Ararat, Virginia in 1969. He entered Virginia Polytechnic Institute and State University in September, 1969 and graduated in June, 1973 with a Bachelor of Science degree in Agriculture Education. From September, 1973 until June, 1974 he worked for Virginia Polytechnic Institute and State University as a graduate teaching assistant while pursuing full-time graduate study. In June, 1974 he began working as a laboratory technician at Virginia Polytechnic Institute and State University and is pursuing part-time graduate study.

L. C. Harold

INDOOR PLANTS
IDENTIFICATION AND CULTURE

By

Lacy Clyde Harold

(ABSTRACT)

A self-instructional kit identifying seventy-three indoor plants, their cultural requirements, and uses was prepared. The kit consisted of seventy-eight slides of the plant material and a forty-five minute taped narration. The botanical and common names of each plant along with its moisture, temperature, and light requirements were superimposed on each slide. Each plant's unique characteristics and uses were described by the script of the tape which averaged approximately thirty seconds per plant.