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Milady's house plants, the complete instr



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MILADY'S HOUSE PLANTS

THE COMPLETE IN-
STRUCTOR AND
GUIDE TO SUCCESS
WITH FLOWERS AND
PLANTS IN THE HOME,
INCLUDING A RE-
MARKABLE CHAPTER
ON THE IDEAL SUN
PARLOR

TEACHING
ILLUSTRATIONS
SPECIALLY
POSED BY
F. E. PALMER
AND PHOTO-
GRAPHED BY
GEORGE OAKES
STODDARD.
MANY OF THE
SPECIMEN
HOUSE PLANTS
PHOTOGRAPHED
BY NATHAN R.
GRAVES.

BY
F. E. PALMER

NEW YORK
A. T. DELAMARE COMPANY, Inc.
1917

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PUBLISHERS' FOREWORD

IN the year 1897 there was brought to us the manuscript of a book, the title of which was: "House Plants, and How to Succeed with Them." This book we published and it went through three editions. In its day it was looked upon as quite a success. Probably many of those into whose hands the present volume will fall will also recollect "House Plants," the author of which was Lizzie Page Hillhouse.

The favorable reception accorded this first effort has encouraged us in the belief that an entirely new book, written this time by a professional—one who has had the rigid training of a gardener, fortified by years of experience and observation in dealing with the problems of maintaining plants successfully in the home—would give the book a standing and an authority which could in no way be controverted.

We admit that this particular field of endeavor has been covered by many writers, some quite good, and some—not quite as good. Just how good, how reliable, how dependable, we leave to the judgment of those who have read these books and acted upon the instructions therein contained.

There is, however, always room for one more, especially near the top, and we are just egotistic to the point of expressing our firm conviction that in "Milady's House Plants," Mr. Frederick E. Palmer, who has been for many years engaged in this very

work of solving the problem of plant life and its continuity in the dwelling-homes of hundreds of women, has here presented a book of rare value in that its every word and teaching may be accepted without question.

We esteem ourselves fortunate in having secured Mr. Palmer as the author of "Milady's House Plants." Its readers must be the final judges, however, as to its merits, and into their hands we confidently commit his work.



AZALEA INDICA

A most adaptable and not at all exacting plant that can be flowered, if given proper care, for a number of years

AUTHOR'S PREFACE

"MILADY'S HOUSE PLANTS" received its inspiration in a lecture on house plants given by the author a year or more ago.

This was before a large audience in Horticultural Hall, Boston, under the auspices of the Massachusetts Horticultural Society, and the intense interest which was there shown, coupled with the liberal notices given by the press, gave evidence that the subject was alive and important.

Alert to these signs, the publishers of the present volume urged upon the author the duty of undertaking a still more ambitious rôle, to the end (as they pleased to put it) that the women of the entire country be given the same helpful information as had been given the women of Boston.

The writer has endeavored in the chapters which follow to give his story in a simple form which all may understand. If he has been remiss in the matter of adorning the tale, he has certainly endeavored to point the pertinent moral. In fact, his sole desire has been to set down briefly and clearly all the more important facts for the benefit of those who are seeking knowledge on this particular subject, unencumbered by excessive verbiage or poetic effusion.

That a right relationship between the amateur gardener and her plants, their successful cultivation and the delightful pleasure of their companionship may be brought about by the study of this volume is the sincere and sole desire of the author.

F. E. PALMER.

Brookline, Mass., April, 1917.



One of the white *Ericas* or Heaths, so called Heathers, which last so long in bloom

Chapter I

COMPANIONSHIP OF FLOWERS

Flowers in Early Literature

THE task of discovering a time or place when men first began to take pleasure in the companionship of flowers is too large an undertaking to attempt in connection with this short treatise. Practically all references to flowers in earlier literature took on symbolic or art phases and never portrayed them as intimate companions or household pets in the sense that we refer to them in this book. Nevertheless, it is essential that this peculiar relationship be set up before one can succeed in their cultivation.

Plants as Living, Feeling Things

In other words, plants must be considered as living, feeling things, just as one considers a canary, a pet dog, or even a child. Absence of this realization is a fundamental cause of failure in the cultivation of plants. Any person who can see a plant excessively dry, or standing for a long time in deep water, or covered with insects, or taken from a warm room and placed out of doors in the cold rain of a Spring day, and does not realize that it is suffering in its way just as much as an animal would under like adverse conditions, has not attained the mental attitude that will allow her to take delight in or make a success of the cultivation of flowers.



Begonia albo-picta. A plant that grows as readily almost as a Geranium and furnishes something "different" (see pages 72 and 78)



Ficus pandurata, a plant that lasts well under the dry atmospheric conditions of a room. The leaves are tough and leathery (see pages 51 and 55)

Causes of Success or of Failure

It is evident that many people realize that there is something wrong between themselves and their plants, owing to their continual assertion that nothing will grow for them. These same people remember how everything that their mother touched grew and thrived, but fail to remember the care and attention that she bestowed upon them in order to attain those results. Many attribute failure to some occult influence or some peculiar antipathy that the plant has toward their particular personality. This is unfortunate not only because it is untrue, but because it closes the mind to learning.

Indeed, the essential causes of success or of failure are generally so simple and easily explained that no one need waste time searching for them in deep and mysterious places. When we consider how much pleasure may be gathered from the cultivation of flowers and with what tender and affectionate regard they are held by almost everyone who has once become acquainted with them, it is surprising that the study of their habits and needs is not more thorough and general.

In the following chapter, we will try to analyze this phase of the question and get together under a few headings the conditions that are essential to the well being of nearly every plant.



Chapter II

FUNDAMENTAL REQUIREMENTS OF ALL PLANTS

Abundance of Sunlight Essential

WITH a few exceptions, the first great requirement of all plants during their growing season is an abundance of daylight, direct sunlight if possible, but at any rate plenty of daylight. This fact is so important that it cannot be over-estimated. Indeed, it is safe to say that if this one condition is granted, all others can be so easily provided as to make success assured with very little effort. It is only in recent years that the value of unobstructed daylight in greenhouses has been understood and appreciated by professional gardeners. When the old-fashioned, heavy-framed, small glass structures gave place to the modern greenhouses and the wonderful results became apparent, horticulturists were amazed to realize how such a simple thing should have remained so long undiscovered. Today, the new greenhouses are "a little lighter than outdoors"; every unnecessary post and bar is zealously eliminated, any defective pane of glass is discarded until our old friend "Sol" is made to give up to the utmost every little flower producing unit that he contains. This one discovery has enabled growers to produce the wonderful Roses and Carnations that we see today and to sell them at half the price that the few of similar quality brought twenty-five years ago. Nothing else



A WELL GROWN CROTON

Crotons are notable for their highly attractive, colored foliage
(see page 29)



PRACTICAL DRAINAGE ARRANGEMENT

This stand represents a practical arrangement for supplying drainage and moist atmosphere for a house plant. The water, passing through the pot, is diffused among the pebbles, and is continually being evaporated into the hot, dry atmosphere of the house. The plant shown is *Araucaria excelsa* (see pages 25, 29 and 62)

has changed; watering, heating, feeding and ventilating have continued just the same, but this great life-giving force of sunlight has been gathered in and used to the full.

This will be worth remembering in every phase of gardening experience. It will cause one to pull aside curtains and roll up shades in the early morning so that the plants in the window may get the first bit of daylight. It will warn against placing window boxes under awnings, or flower beds in the dense shade of trees, and even the hardy shrubs will be given their full share of the blue sky overhead.

Light and Water

The two great sources of supply of nourishment to a plant are light and water. The function of the leaves in assimilating the light and building up the structure of the plant and determining the color of the flowers involves a most profound study quite outside the scope of this little book. One of the activities of the leaves, however, should be understood, as it has a direct bearing on the subject of watering and that is, the constant evaporation that is going on, from their surfaces, especially in warm, dry atmospheres. This is necessary to the health of every plant and the supply of water to compensate for this comes entirely through the roots. Then, again, all the food that a plant obtains from the soil must come to it in a dissolved form before it can be



A rubber sprinkler handy for use among house plants and cut flowers

digested and assimilated; consequently, all plants during their growing period should have an ample supply of water.

No Special Needs

Too much importance is placed on the fancied special needs of different varieties or species, when, as a matter of fact, no such needs exist. The endeavor should be made rather to think of plants as one does of pet animals and place within their reach abundance of fresh water at all times, leaving it to their instinct to drink when they are thirsty. In the case of the potted plant, little fear of over-watering need be entertained if effective drainage has been provided.

On the other hand, to be constantly pouring on water when it is unnecessary is not only a waste of time, but tends to impoverish the soil by carrying away much valuable plant food. Certainly, to stand a plant in deep water for any length of time is not only fatal but cruel.

When Plants Want Water

The successful professional grower relies entirely on his daily observation as to when a plant needs water, the dry aspect and light color of pot and soil being his principal guides. Stern necessity has trained his eye to be very keen in this respect; with the novice, an equally strong desire to succeed would quickly have the same result. Perhaps the best general rule is, that when the soil in any pot or box has dried out so that it is friable or crumbly to the



Aspidium Tsussimense, suitable for a cool house, showing a small plant in a 2½-inch pot and a larger one in a 6-inch pot (see page 38)

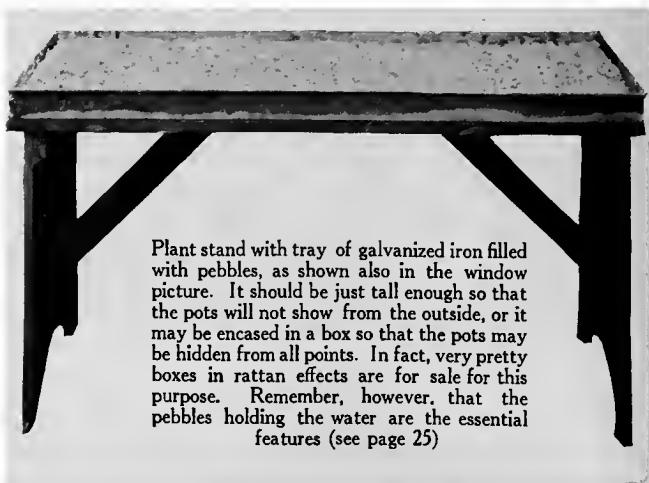


Cibotium Schiedeii, one of the Australian tree ferns. This is one of the chief favorite ferns of commercial florists, which they use frequently in their larger decorations (see page 47)

touch, as distinguished from a pasty condition, it is time to water it. In every case, enough water should be given to saturate the entire ball of earth at the time.

Good Drainage

A certain firmness or compactness of the soil is necessary to good drainage. If the earth has been insufficiently "firmed" down, it is very slow to dry out and will quickly suffer from too much water. The soil in this case is like a loose sponge and remains saturated for a long time and the water becomes stagnant. It is worth remembering that many inexperienced amateurs use pots much too large for the needs of the plant and always leave the soil in a loose, spongy condition, both of which are conducive to ill health. No amount of drainage will help under



Plant stand with tray of galvanized iron filled with pebbles, as shown also in the window picture. It should be just tall enough so that the pots will not show from the outside, or it may be encased in a box so that the pots may be hidden from all points. In fact, very pretty boxes in rattan effects are for sale for this purpose. Remember, however, that the pebbles holding the water are the essential features (see page 25)

these conditions, and if, as is often necessary for reasons of cleanliness, the plants stand in saucers, it will be almost impossible to maintain these over-potted ones in good health.

Saucers, Trays and Pebbles

The use of saucers in which to stand potted plants may be a benefit or an evil, according to the degree of intelligence exercised. Some provision, of course, is necessary to prevent water which runs through the pot from injuring the floor or furniture. On the other hand, many plants suffer from standing saturated all the time in a saucer full of water. This evil can easily be obviated by using a saucer two sizes larger than the pot and filling it half-full of small pebbles. In a similar way, the very best arrangement for a group of window plants is to provide a shelf the full length of the window and about twelve inches wide. This should be covered entirely with a flat tray of galvanized iron two inches deep and filled with a layer of these small pebbles one and one-half inches deep. Plants standing on this may be watered without any fear of overdoing it. The superfluous water runs in among the pebbles and quickly evaporates so that there is no need of providing any special means of drawing it off. This constant evaporation is of great benefit to the plants by providing a moist atmosphere and the whole affair is neat and practical. The pebbles referred to are those used by roofers and may be obtained of any seed or hardware store. They are inexpensive and useful in many ways.

Fresh Air and Atmospheric Moisture

Fresh air is as necessary to the well-being of plants as it is to animals, the only qualification in its free use being to avoid cold draughts. Correct temperature is difficult to determine where many varieties of plants are concerned, but fortunately they are willing to meet on a common ground as long as extremes are avoided.

A moist atmosphere is also of great importance to healthy plant life and it is also the most difficult to obtain in our modern Winter homes. Happily, now that the gospel of moist air is being preached as conducive to human health, our house plants will in time share this great benefit. In the meantime we have devised the simple means of creating some local moisture around the window plants that is quite successful when tried and which we have just described under the head of watering.

How to Keep Plants Clean

Cleanliness embraces freedom from accumulation of dust, the quick detection of the first onslaught of insects and their removal, the removal of decayed foliage and a frequent cleansing of pots and saucers. Continual watering or spraying of the foliage of plants is injurious. An occasional washing or spraying for cleansing purposes only is advisable, however, as the leaves are not able to perform their functions if covered by dust or the exudations of insects, or even the oil with which some people are wont to anoint them.

Success in any Well-balanced Soil

Fertile soil is not the deep, dark mystery that it was considered many years ago. At one time it was thought essential to success that every species and sometimes every variety of plant should be treated to a soil prepared under a very exact formula. It has been discovered through experimenting and observation that nearly all plants will thrive equally well when grown in any well-balanced soil, here again showing their adaptability, as in the case of animals, to varying conditions that may be imposed upon them. Any variation from this rule to meet certain requirements of plants is along the line of the texture of the soil rather than of its fertility.

Constant and Intelligent Care Pays

Constant attention is the natural expression of love to the object of its devotion. If plants are given loving care, it is generally intelligent care. On a recent visit to a friend, the writer discovered a very pretty specimen of Maidenhair fern standing in an ordinary tea saucer on a side table in the dining-room. It was quite near an open east window, (the day being warm), and measured about twelve inches tall and as much wide and was in a relatively small pot (4-inch). Being a very unusual sight and finding in another room several well-grown specimens of other plants, he immediately began to question the lady of the house as to how she obtained such splendid results. Without quoting the entire catechism, it is sufficient to say that the questions might well have

been about some child that had excited one's admiration. The last question as to what was done with the plants when she went on a vacation was answered by her father, whose housekeeper she is, in this way: "Don't you worry, she makes just as careful provision for her plants when she leaves home as she does for me and the cat."



Magnificently-flowered specimen of one of the French Hydrangeas of the Otaksa type (see page 117)

Chapter III

FOLIAGE PLANTS FOR HOUSE DECORATION

The Best Kinds for House Culture

IT must be a source of pleasure to those who have been enjoying the beauties of out-of-doors Nature all Summer to know that it is possible to bring into the house, plants of beautiful flower or foliage. Not many of these, however, that one sees in the Summer garden will submit to the confinement of the house in the Winter. This is particularly true of our hardy, native trees and shrubs which lose their leaves in the Winter, or if evergreen, require a long cold period of rest just the same. So that it is a waste of time to dig up the pretty little specimens of Pines, Junipers and Spruces or the Mountain Laurels, Rhododendrons and ferns that one longs so much to take home as a memento of the pleasant vacation time. Fortunately, we have the warmer states and countries of the South from which to draw and they have furnished us with a wealth of beautiful foliage plants that thrive well in captivity. It is interesting to realize that most of our familiar house plants belong to tropical climes where they are in active growth nearly all the time, never being denuded of foliage as are our Maples and Oaks and often attaining the size and character of forest trees. Take the popular small *Araucaria excelsa*, for instance, which we know as a

small potted plant, two and one-half or three feet tall at most, and which we shelter so tenderly from our scorching sun. In its native home in the South Pacific it grows into a large forest tree and flourishes in a heat and sunlight as intense as those of southern Florida.

The list of foliage plants which follows is very limited; it comprises the most popular varieties, however, being prized not only for their beauty, but for their ease of cultivation.



ARECA LUTESCENS

Showing its clustering habit of growth. The base of the stems is of a golden color (see page 32)

PALMS

Kentia Belmoreana and K. Forsteriana

The first plant most people wish to buy is a palm and certainly the most beautiful is the Royal Palm, *Kentia Belmoreana*, a native of the South Pacific



KENTIA BELMOREANA

Probably the most used of all room palms

Islands, with its ostrich plume-like leaves and glossy dark green color. Equally hardy, but more upright and stately and not so graceful, is its sister variety, *Kentia Forsteriana*.

Areca lutescens (yellow-stemmed)

The most graceful of all. It will not endure quite as rough treatment as the *Kentia*, but makes up for this by very rapid growth, so that a plant having met with misfortune will soon produce enough leaves to recover its beauty. While the *Kentias* grow up from a central single stem, the *Arecas* throw out an abundance of young shoots, each



COCOS WEDDELIANA

The most graceful of the smaller palms (see page 35)

with several stems, making a very beautiful, feathery appearance right down to the surface of the ground.

Phoenix Roebelenii

The Phoenix species is composed mostly of rather coarse-growing varieties not at all desirable as house plants, although by reason of their hardiness they may be used to great advantage on the lawn in the Summertime. They are all natives of India and grow



PHOENIX ROEBELENI
The gem of all room palms (see page 34)

to a large size, notably the *Phoenix dactylifera*, which bears the well-known dates and attains a height of more than 150 feet. The variety *Phoenix Roebelenii*, however, which is of somewhat recent introduction, takes its place among palms as one of the most beautiful that we know. Besides its graceful, fountain-like aspect, it has the quality of extreme hardiness, standing up bravely under treatment which would be fatal to almost any other kind.



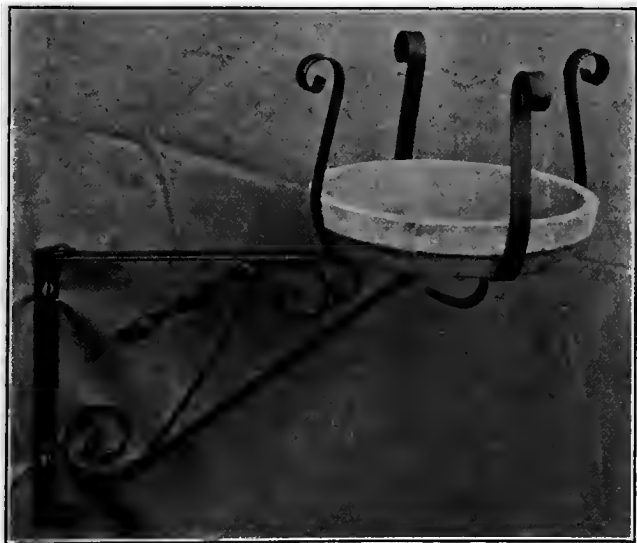
The popular *Pandanus Veitchii* which, if given proper care, can be maintained in the house for years (see page 60)

Cocos Weddelliana

This is the pretty little palm which is used so much by florists as a center plant in fern dishes. It is worthy of a much more extended use than this and may be easily grown year after year until it attains a height of two or three feet. Most of the members of this family are large, coarse-growing trees, one of them yielding the edible coconut. They have no value whatever as house plants.

Latania borbonica

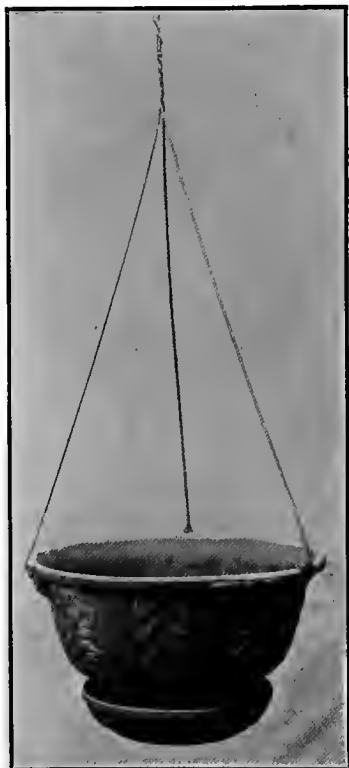
Mention may be made of the Borbon palm, *Latania borbonica*, which many years ago in the



PLANT BRACKET

A practical, ornamental and inexpensive plant bracket of bent iron, holding any pot up to 7 in. size (see page 58)

larger homes was considered the most popular decorative plant. Its large, fan-like leaves and spreading habit preclude its use in the small dwelling houses of today and in spite of its inherent beauty and easy



A practical hanging pot having ample saucer permanently attached and having lugs on the side for wire hangers. These lugs are simple but very important features. Most hanging pots have holes bored through the rim for attaching the wires, with the result that nearly all the water given the plant runs out through the holes and never reaches the roots. Wire baskets and fern balls are impracticable as house plants as they cannot be conveniently and thoroughly watered (see page 60)

cultivation, it has been relegated to the past memories. As in the case of the Phoenix, however, it makes a wonderful decorative plant for the lawn in the Summertime.

Indications of Good Health and Deterioration

All the palms may, with a little intelligent care, be "grown on" year after year indefinitely. They thrive better in relatively small pots than when overpotted, for reasons already stated. A Kentia, for instance, three feet tall with five or six leaves should be in a six- or seven-inch pot; for a very large specimen, seven feet tall with ten to twelve leaves, a ten-inch pot is sufficient. The indications of good health are the dark green color of the foliage and the fact that the new sword-like leaf, as it pushes up from the center and unfolds, is larger than the one that preceded it. A good, healthy plant should make two or three leaves a year and if at any time the newest one unfolds itself before attaining the size of its fellows, it is a sure sign that something is wrong with the plant. The cause is generally the decay of the roots through standing in a jardiniere of deep, stagnant water and, if this condition continues, the plant will lose leaf after leaf and finally die. When the whole plant turns pale green in color and eventually almost yellow, the cause is generally lack of water, which to a plant is starvation. It has either been extremely dry several times or is insufficiently watered all the time. Seldom or never are any plant troubles caused by worms or other insects at the roots. Palms are patient under suffering and do not show the results of neglect for many days and even weeks and on the

other hand are slow to recover. They will endure and even thrive in a position quite removed from a window, provided the room is fairly well lighted, and having become accustomed to a position should be allowed to stay there. Constantly moving any plant about the house, under the impression that the change is refreshing to it, is a common but serious error, in fact, having quite the opposite effect.

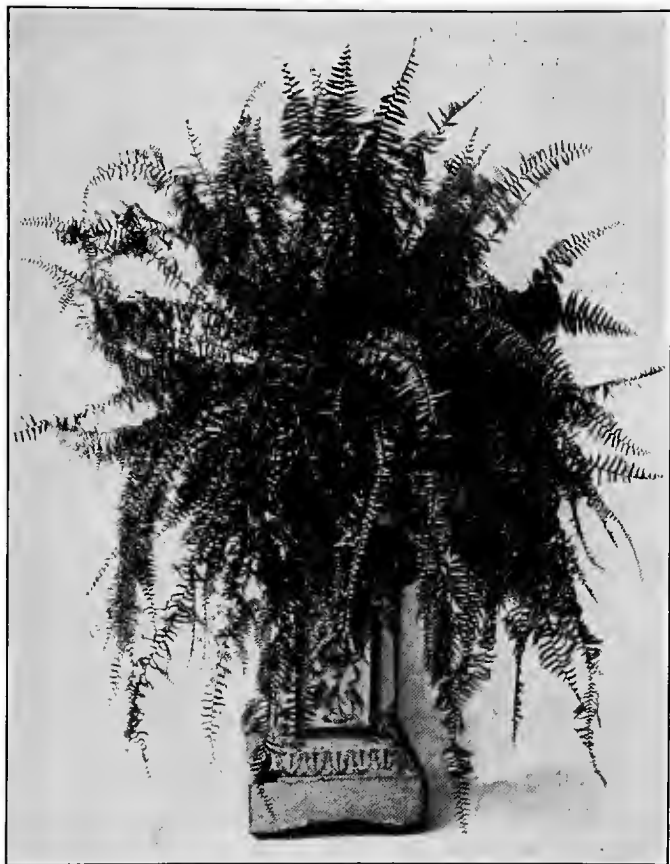
FERNS

As Attractive Indoor Plants

Next to the palms in value, as indoor decorative plants are the different species and varieties of ferns, and here again a few only of the most hardy have been selected. For the reasons given, none of our hardy Northern species are of any use, as they are all herbaceous, that is, lose their leaves in the Winter, and consequently we must draw on those from warmer climes where all plants are evergreen. It matters little where they came from originally so long as they are beautiful and interesting; in fact, most of the plants mentioned here are so familiar to us that they might as well be native.

The Boston Fern

Perhaps the most popular fern in the world is *Nephrolepis Bostoniensis* and this is not an extravagant claim, because of late years, when a plant has become popular in New York and Boston and a few other large cities, enterprising florists the world over soon secure it and distribute it among their



THE BOSTON FERN

There were apparently so-called "Boston" ferns in advance of this one, which however quickly displaced its rivals. It was at first called Foster's New *Nephrolepis Bostoniensis*, var. *Fosteriana*. Our illustration is from a photograph taken in 1902, showing one of the first large plants of this variety. At that time it was named *Nephrolepis Anna Foster*, after the wife or daughter of its discoverer, L. H. Foster (see page 38)

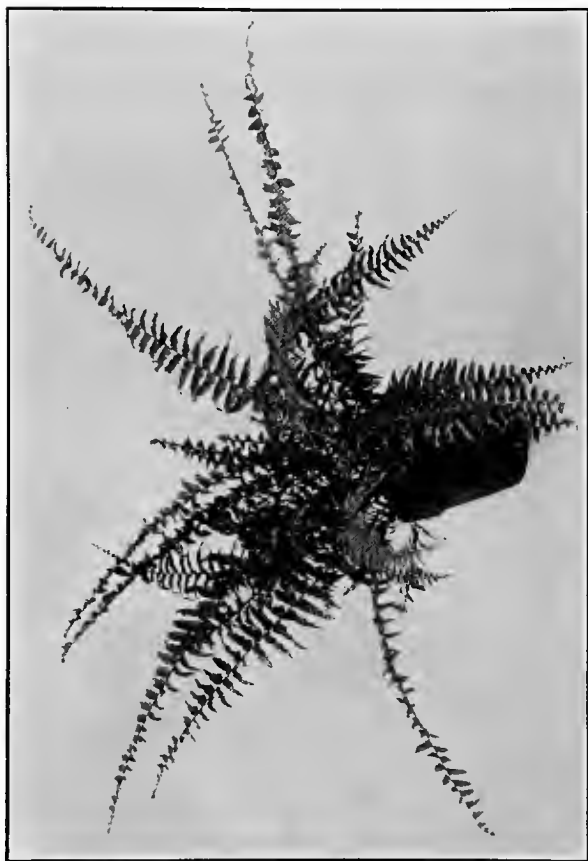
constituents. Much effort has been made lately to trace the origin of this plant. It is conceded that in Dorchester, Mass., some thirty years ago, the now recognized Boston Fern was discovered in a collection of *Nephrolepis* belonging to a Mr. Foster, a florist there. A beautiful thing it is, with its wealth of arching fronds that in time become drooping, fitting itself into almost any required position, but at its best standing alone on a small table in a bay window or in a hanging pot in a similar place.

Natural Abode of Ferns

Nearly all ferns in their natural state are woodsie plants. They enjoy the shelter of the trees from excessive sunlight and wind and their roots feed on the decaying leafmold at the base. These roots grow quite near the surface and although the atmosphere and soil are moist all the time, the presence of deep and stagnant water is an abomination to them. These facts are of value as pointing us to a reasonable method of cultivating ferns in the house.

Responsive to Good Treatment

In all these respects the Boston Fern is as sensitive to abuse as any and on the other hand responds to good treatment in a most grateful and gratifying way. Its chief enemy is the deadly jardinière. Being considered a piece of furniture and occupying a prominent position, it is required to be dressed up and so its troubles begin. Few people have the time or patience to operate a jardinière successfully. Sooner or later the necessary frequent examinations

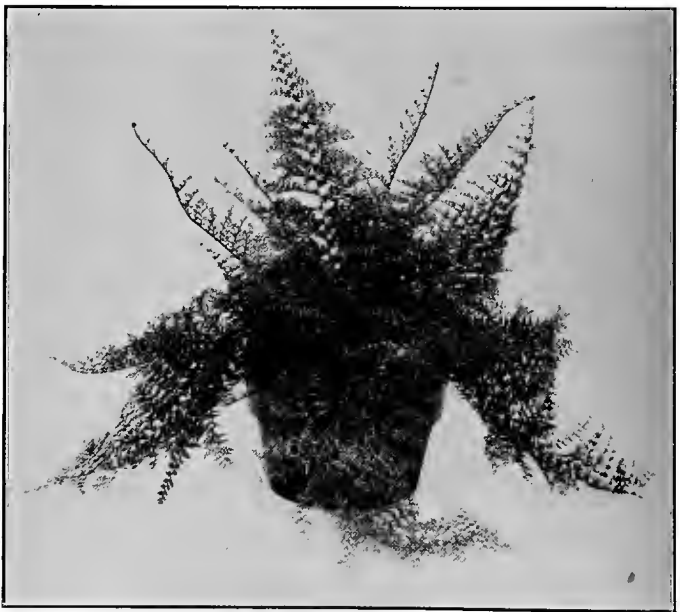


Nephrolepis Rooseveltii, a beautiful, wavy form of the Boston fern (see page 44)

are neglected and the water rises higher and higher and becomes more and more stagnant and repulsive to the plant. The result is the roots die and one by one the leaves, or fronds, follow. Brown scale appears mysteriously and soon spreads over the remaining fronds and then the end is quickly reached.

Summary of Requirements

The requirements of nearly all ferns may be summarized as follows: Protection from excessive sunlight, that is, they should be placed in an east or



NEPHROLEPIS SMITHII

The beautiful "Lace Fern." A good house plant

west or north window in the Winter; quiet surroundings where people do not frequently rub against the fronds and where boisterous winds do not blow directly on them through the open window; leafmold for the roots; plenty of water and perfect drainage; and that most difficult condition to procure, moist atmosphere.

Other Varieties of Nephrolepis

Many other varieties of *Nephrolepis* besides Bos-



NEPHROLEPIS WHITMANI
As a bracket-plant (see page 44)

toniensis have appeared in the plant market during the last ten or fifteen years which are closely related to the Boston Fern and require the same treatment. Some of these are quite different in appearance, being finely divided and crested so as to resemble moss; nearly all are pretty and interesting and fit into a variety of positions. A few of the best are as follows: Roosevelt, a noble variety with long, wavy fronds; Teddy Jr., a dwarf form of the ordinary sword fern, very hardy and useful for a position limited in size; Whitmanii, a cut-leaved, moderately crested variety; Schmidtii, a delicate, finely crested kind, called, with several others of similar form, the "Lace Fern."



Holly Fern in 2½ in. pot, and the same variety grown on for a year into a nice window fern in 5 in. pot (see page 45)

The Handsome Holly Ferns

The next in value to the sword fern family as house plants are the two varieties of *Cyrtomium*, or Holly ferns, the newer and more decorative form, the *Rochfordianum*, being a very handsome plant indeed. It is distinguished from the old-fashioned Holly fern by having notched or fringed edges to the leaves or pinnae, as the sub-divisions of fern fronds are called. Both these varieties are extremely hardy and, although usually seen as small plants in fern dishes,



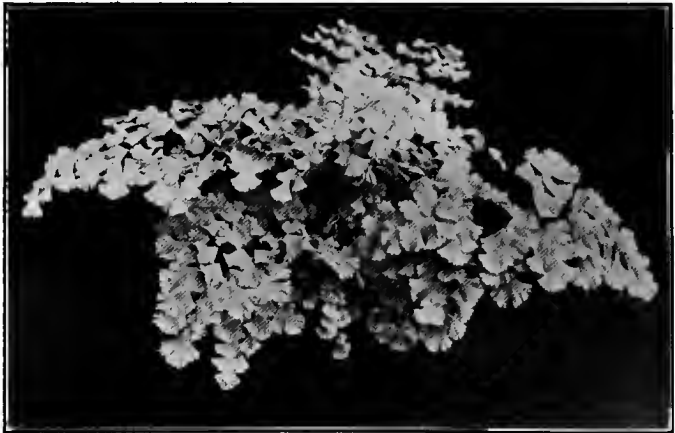
PLATYCERIUM, STAG'S HORN FERN

An interesting plant showing the division of functions. The broad, upright fronds are spore bearing, while the sterile fronds cling closely to the object on which the plant is growing, such as the trunk of a tree, and furnish a home for the young plants (see page 64)

will grow to considerable size if given the opportunity. Many of the small ferns that are known as table ferns are in reality young plants of large growing species and if potted individually in larger pots and cultivated carefully for a year or so will make very desirable house plants. The *Pteris* species, embodying half a dozen nice varieties, is particularly valuable in this respect.

The Graceful Maidenhair

Then comes that gem of all ferns, the Maidenhair, which everybody would like to grow and which so few succeed in doing. The name of the species is *Adiantum*, which is derived from Greek words expressing its aversion to water on its leaves, and the variety commonly called Maidenhair fern is the *Adiantum*



An acquisition among Maidenhair ferns. This has become known as the Glory fern and is a variety of *Adiantum Farleyense*

cuneatum. It may be successfully grown in a moderately shady window in the house, providing that a moist atmosphere can be given it, emphasizing in its demands the wide difference between moist air and water.

Australian Tree Fern

With those who have room enough, the beautiful Australian tree fern, *Cibotium Schiedeii*, should certainly find a place in the house collection. In order to reach its full development, it must have a space fully six feet in diameter where it may remain undis-



ADIANTUM CUNEATUM

The true Maidenhair fern (see page 46)

turbed. Its graceful fronds, with their grayish blue under-surfaces, form one of the most decorative plants imaginable.

Bird's Nest Fern

The Bird's Nest fern which lately has been distributed by florists can scarcely be recommended as a



ASPLENIUM NIDUS, BIRD'S-NEST FERN

house plant, as it is most difficult of cultivation. The absence of extreme moisture in the air is the principal cause of failure. Of the multitude of ferns that remain outside of the above small collection, it will be interesting for any amateur to try varieties from time to time and test out their adaptability to house treatment.

How Ferns are Reproduced

Ferns do not flower; they are reproduced by



A little plant with a big name—*Pteris serrulata cristata nana compacta*—which means the dwarf, compact, serrulated and crested *Pteris* (see page 46)

spores which form on the underside of the fronds and which are sometimes mistaken for insects. Some ferns have rhizomes or roots that crawl on the surface of the soil and these produce young plants at frequent intervals; others bear young ones all around the edges of the fronds and these drop off and grow. Sometimes young plants from either of these sources develop forms and markings quite distinct from the parent plant. These are eagerly seized by the florist in the hope that some valuable new variety has thus accidentally come into his possession.



Pteris Victoriae, a variegated variety (see page 46)

MISCELLANEOUS FOLIAGE PLANTS

The Rubber Plants

Next in order among foliage plants are the two varieties of rubber plants, *Ficus elastica* and *Ficus*



Ficus repens in a 7 in. pot, trailing over and firmly attaching itself to a rock. This plant is a strange member of the Rubber Plant family

pandurata. The former is too well known to need description, at one time being about the only large foliage plant cultivated in the house. It has fallen somewhat into disrepute of late years owing to this very commonness, but it is still one of the most beautiful and decorative plants and the most easily grown of any. The cheerful way in which it will adapt itself to conditions so opposite to that which it enjoys in nature commands our admiration. The common error of supposing it loves a position in a



REX BEGONIA

It is very open to question whether these adaptable and desirable ornamental foliage plants are appreciated as they should be. Their merits deserve to be more widely known (see pages 72 and 78)

dark hallway or in the remote corner of a dining-room must be apparent when one realizes that in its native habitat in the tropics it is exposed to the most brilliant and continuous sunlight. When one of these plants has finally succumbed to unnatural conditions in the house, the only method of recuperation is to restore it to the open garden and sunlight, of which more will



BEGONIA METALLICA

An easily grown house plant (see pages 72 and 78)

be said in another chapter. No other house plant has been subjected to so much quackery in the way of plant food and medicine as this old friend. These range all the way from painting the leaves with oil, to make them appear healthy at any rate, to injecting raw oysters into the soil in order to try what a



DRACÆNA MASSANGEANA

Not quite so hardy or vigorous as the *Aspidistra*, but one of the best of the broad leaved *Dracænas* (see page 56)

high grade diet would do for it. All these unnatural things are harmful and if the plant survives, it is in spite of and not by reason of them.

The newer variety of rubber plant, *Ficus pandurata*, while enjoying all the hardiness of its sister, is quite distinct in appearance, having large Cabbage-like leaves of irregular outline and deep green color, forming a truly decorative plant.



ASPIDISTRA

What home is without this "cast-iron" plant?—a real "friend of man"
(see page 56)

Dracaenas

The large family of *Dracaenas* furnishes only one variety, *Massangeana*, that may be truly called useful as a house plant. Again, in their case, when once the secret of providing a moist atmosphere is discovered, the whole gorgeous species will doubtless be found in our homes. To see them revelling with all their gorgeous stripes and highly colored foliage in the oppressive humidity and heat of Central America and the West Indies, is an experience not easily forgotten.

Aspidistra

A well-known and useful house plant. It is not particularly elegant in form, although filling some positions to advantage. Extreme hardiness is its chief value and it certainly will endure adverse conditions better than any other house plant. On this account it has attained a rather important place in the plant market and is exported annually by the thousand from Holland and other European countries to the United States at so much per leaf. Any one familiar with New York can make a guess as to what proportion of these find their way into the hotel window boxes of that city.

Hedera Helix

The common Ivy, or English Ivy, as it is often called, is a very decorative house plant and is rapidly coming to its own in popular fancy. There has always been a good deal of kindly sentiment attached

to this hardy old vine and it seems more than any other plant to be associated with the "old home" in Europe and whether of this generation or others more remote, the feeling is there just the same. These associations are, however, entirely of an out-of-doors character and it is only recently that the beauty and value of the English Ivy as a house plant has been fully appreciated. For the modern sun parlor, which is generally half conservatory, it is just the thing to cover the walls between windows. It also makes an exceedingly pretty frame when trained up the sides and over the tops of windows that are devoted to plants. In whatever position it is used, it should be trained on a stick or trellis so that it can be removed bodily from the house into the garden or at least out-of-doors during the Summertime, for hardy as the plant is, an all-the-year-round sojourn indoors is more than it can stand. Abundance of water during the dry steam heated days of Winter is necessary, even an occasional drying out being sufficient to stunt the young growth and to cause the ever waiting scale and aphid to appear.

Asparagus plumosus

Is so much associated with small ferns in table dishes that much of its mature beauty and usefulness is missed. "Potted on" into a five- or six-inch pot, it makes a large decorative plant. It is a very gross feeder and requires a larger pot, relatively, than any other house plant, particularly if its full beauty as a climber is to be attained. A perfect way is to plant one at each end of a window box, say eight or ten inches wide and as much deep, filled with rich loam

and well drained. Other kinds of plants can occupy the intervening space in the box, but the *Asparagus* roots will have the entire bulk of loam to roam through at pleasure and will certainly take advantage of it. Started in this way in early September and given a nice southern window with no obstructing curtains, these beautiful vines will cover the entire window frame by the following Spring. A box of this kind must have ample drainage carefully arranged, otherwise the soil will soon become stagnant and untenable.

Asparagus Sprengeri

Like all other members of the species, is a very hungry plant and requires plenty of rich soil in which to develop to its full size and beauty. It would love to be in the window box with its sister, *Asparagus plumosus*, just described, if it were not for one objection. Being essentially a drooping plant, it hangs over the side of the box and as the only available side is that toward the room and away from the window, the plant soon begins to suffer from lack of light. A perfect position for it is on a bracket by the side of the window and half way up, or even higher; here, in a seven- or eight-inch pot, a good-sized plant may be developed during the season. In a sun parlor, these beautiful plants arranged along the entire sides of the room, two to each window, with luxuriant fern-like fronds hanging down almost to the ground, are quite effective. Artistic, inexpensive brackets (see page 35) of bent iron are nice enough for any room and they may be procured of any seedsman or hardware dealer for about 50c., the largest size being preferable.



ASPARAGUS PLUMOSUS

A notably fine house plant, either in a small pan or grown large as shown here
(see page 57)

Good-sized, one-year-old plants should be used which may be purchased for less than \$1.00 each. Hanging pots might be used to advantage too, were it not for the objection that they are generally¹ required to hang in almost inaccessible places and at best cannot be thoroughly watered without danger of overflowing. The only practical form of basket, which is pictured here, is made of common pottery and has a saucer built on permanently. If one of adequate size is used and is hung in a position easily reached, there is no reason why it is not as good as a common pot. The cardinal requirements must always be observed, whatever the shape of the receptacle: facilities for abundance of water and efficient drainage.

Pandanus Veitchii

Two or three more species of foliage plants will complete our practical list. *Pandanus Veitchii* must not be omitted, for it is a very beautiful and decorative plant and does not object as much as some to being set back in the room away from the window a little. It is a native of the Malay Peninsula and naturally loves warmth; it should never be subjected to the least bit of cold draught from an open window in the Winter time and certainly never should be set out in the cold rain for "refreshing" purposes. In fact, next to a cold draught its great aversion is to having water poured into the axes or bases of the leaves. The plant has very strong roots and these in their effort to thrust down deeply into the soil result in pushing the plant up out of the pot, after the manner of potted palms. This should be no cause for alarm as they seem to thrive better in this stilted

condition than if buried too deeply in the soil. Nearly all thick-rooted plants have the faculty of living and thriving on a mainly water diet and this plant is no exception, the writer having known specimens to grow for years, in size and beauty, having no visible nourishment outside of plenty of fresh water.



Asparagus Sprengeri as a hanging-plant (see page 58)

Araucaria excelsa

The Norfolk Island Pine is an evergreen Pine tree and, as before stated, in its native home in the Southern Pacific it grows into forest tree proportions. It is sometimes, although erroneously, called "The Monkey Tree," or the "Monkey Puzzle," which name really belongs to another member of the Araucaria family. Whether it is because this plant is a Pine and the popular fallacy is that a Pine will grow in the shade, or because it is fern-like in its branches and so should have the treatment of a fern, is difficult to say. At any rate, it is generally relegated to the darkest corner of the room during the darkest months of the year and when after a valiant struggle it gives up the fight, is returned to the florists' hands in the spring classified as "not a very hardy plant."

Anthericum

Is a very pretty and hardy little variegated plant which has the habit of forming pendant shoots which again produce little baby plants at intervals. Placed in a hanging pot or on a bracket where these can hang down, it makes an interesting house plant.

Tradescantia

The Wandering Jew, last but not least ! Everyone knows and appreciates this hardy, quick-growing, trailing plant. Although very soon becoming shabby, its youth and beauty may be quickly renewed by rooting the tips of shoots and throwing away the old plant. For hanging baskets, brackets, or edges of window boxes, it is invaluable.



Tradescantia or Wandering Jew (see page 62)

Foliage Plants Bear Flowers, Fruit and Seed

Although the plants mentioned in the preceding pages are called foliage plants, because their chief beauty lies in their foliage, they all, as a matter of fact, excepting the ferns, bear flowers and consequently fruit and seed. Some of the palms bear valuable edible fruit, such as dates, cocoanuts, etc., while from others are expressed palm oil, sago and a host of other valuable products. To the natives of all tropical climes the palms furnish, besides food, lumber for building, fibre for ropes, leaves for thatching and a thousand other valuable articles of daily use. All are raised from seeds which are imported in large quantities by nurserymen here and in other northern climes, to supply the market for house plants, conservatories, park decoration and so forth.

Variegated and Green Foliage

Variegated foliage is an abnormal condition and most healthy plants revert in time to the original green coloring. No variegated plant is as robust as a green one of the same kind, although *Pandanus Veitchii* and a few others that might be mentioned seem to disprove both of the above statements.

Fern Spores and Palm Seedlings

Raising of ferns from spores is a delicate operation and requires not only skill and experience, but special greenhouse facilities as well. The growing of seedling palms takes less skill but more time, so that with some species five or six years must elapse before the plant becomes of decorative size. In any case, it is useless to attempt this part of business in an ordinary

dwelling house. Fortunately, young thrifty plants of all the kinds mentioned can be purchased of any local florist or secured from remote places by modern express systems, in most cases at moderate expense.

The Prime Object of Growing House Plants

At the risk of being charged with sacrificing the practical to the philosophical, the fact may well be repeated here that unless the prime object of having plants in the house is the pleasure of tending them, of making them thrive in spite of unnatural conditions and enjoying the success of it all, considering the labor well worth while, the time and money devoted to the enterprise is practically wasted. Happily the way is not hard and the desire so universal as to be almost inborn, all that is needed being for those who know the truth to teach it.



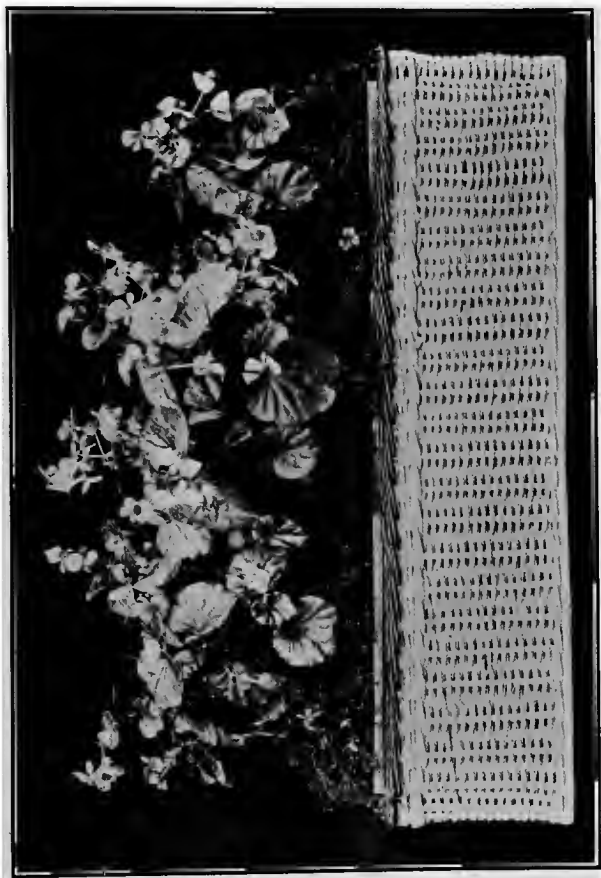
Anthericum as a bracket plant (see page 62)

Chapter IV

FLOWERING PLANTS FOR HOUSE DECORATION

The Joy of Growing Flowers

WHILE all the nice things that have been said of the palms and ferns and other beautiful foliage plants are quite true and the pleasure of cultivating them and watching their new and healthy leaves develop is very great, they are after all, rather slow and prosy things. It is true that their presence is indispensable before a house can be called a home, but after a certain point of satisfaction is reached there still remains a yearning for something more delicate, more beautiful and more ephemeral. Flowers alone can satisfy this and if these can be produced in one's own home, then one's joy is complete. To realize the universal nature of this desire, it is only necessary to observe on every hand the efforts to satisfy it. In England, home gardening and window gardening have for generations been among the most important social activities of the people, rich and poor alike. Their flower shows are their public holidays and the spirit of the garden seems to be everywhere. Here, in this country, the climate is not quite so friendly perhaps, but the sun is brighter and shines for us many more days in the year. There is, in fact, no essential reason, granting the desire, why our home gardens and window gardens should not be equally successful.



Window-box of everblooming Begonias (see pages 72 and 78)

Transferring Plants

The great change in environment that takes place when transferring a plant from the place that it has chosen in its native habitat to that which is chosen for it in a dwelling house must, after a little thought, be apparent to everyone. Foliage plants adapt themselves to this change with more or less good



Well-bloomed variety of *Hydrangea Otaksa*
(see page 117)



SPIRAEA JAPONICA

Also named *Astilbe japonica*. Another of the thirsty plants and good for the garden after flowering (see page 98)

grace. They have little to do but just live and grow and wait for better times, or slowly give up the fight, if conditions are unbearable. The plant that has started out to bear flowers, however, is quite a different subject. It has undertaken the creative function and knows exactly what it needs in order that it may succeed, and the person who brings it into the house should also know those needs and bend every effort to supply them.



GLOXINIA

These warm house plants are noted for the gorgeousness and brilliancy of their flowers in many colors (see page 66)



No lover of indoor plants would ever be without a Fuchsia. There are many kinds to choose from. This, named Scarcity, is one of the best (see page 117)

Flowers—Materialized Sunlight

In order to produce its flowers, the plant must have sunlight. Flowers are, in fact, materialized sunlight. Some, such as bulbous plants, make and store away during the Summertime the color matter and other necessary elements to form the flower so that little besides water is required to develop them in the following Spring. This is also true of the early Spring-flowering shrubs, as is often demonstrated by putting branches of Forsythia or Pussy Willow in water in a warm room where they will develop their flowers with little or no light present.

Where to Place Flowering Plants

These plants all belong to cold Winter climates and are indicated in the list which follows as plants that may be set somewhat back from the south window, or be placed near an east or west window, or quite close to a north window. Plants that produce their flowers in the growing shoots, such as Geraniums, Heliotropes and Begonias, need all the sun that can be given them and consequently should be placed near the glass in a south window, or if the room is very light, all excepting Geraniums may stand in an east or west window. By a "very light" room is meant one which has several windows that are not overshadowed by piazza roof or nearby trees and of course where the light is not obstructed by unnecessary curtains, blinds or shades. If the carpet or wall paper is considered of more importance than the plants in this respect, then the latter should be removed to a room where the sunlight can be freely admitted.

Geraniums Indoors

Geraniums require special mention because, while being most desired, they are so little understood. Seeing that they are the most common of bedding plants, it is taken for granted that they will thrive under any treatment. The fact that they flower so bravely with scarcely any care through the Summer leads many to suppose that they will thrive equally well without care in the Winter. This inference is entirely wrong and is proved so by the annual Winter disappointment with them as house plants. Considering that all the conditions under which these



The popular pink Begonia *Gloire de Lorraine*. Lasts well in bloom indoors (see pages 72 and 78)

gorgeous plants bloom in the Summer can be and are reproduced indoors in the Winter, excepting the bright sunlight, the natural effort should be to supply all of that commodity that is available. This is a simple line of reasoning and yet the point is so often missed, for we find these sun-loving plants languishing in dark corners or behind heavy curtains with no possibility of their flowering until the next Spring and Summer. If the Winter is unusually cloudy, it is useless to expect much bloom from the Geranium under the best artificial conditions. If, however, the average sunlight prevails, they will flower profusely through October, November, February, March and April and sparsely during the Midwinter months.

To get the best result, plants should be grown in pots all Summer from slips or cuttings taken in May. These, at the time they are brought into the house in the Fall, will be nice, sturdy little plants 8 inches or ten inches tall, with two or three shoots and in not larger than five-inch pots. Large pots conduce to rank, sappy growth; small pots to the kind of growth that produces flowers, yet enough soil must be there to enable the plant to grow during the Summer, so a four- or five-inch size is considered the happy medium. A bay window facing south is the only aspect for the Winter and the plants should be placed on a shelf so that the leaves touch the glass and should be left there without disturbance. Their leaves will all face, in a short time, toward the window, because it is the upper surface that has the machinery for turning the sunlight into flowers and if the plants are persistently turned around so as to show nice faces to the room, they will quickly exhaust their strength in the vain endeavor to have their own way.



AZALEA INDICA

These shrubby plants are not only admirable for the house, but are useful, inasmuch as they can be planted out of doors after blooming (see pages 84 and 112)

Watering

The rule for watering Geraniums and all other flowering plants is just the same as that previously given for foliage plants. Assuming that the pots are of proper size, four inches or five inches in diameter being amply large for the average window plant, and that the soil has been well firmed and that proper drainage has been provided, then it is almost impossible to injure the plant by giving too much water.

The Growing Period

The term "during its growing period" has been mentioned and refers to the extreme activity of every plant or tree during the long bright days of Summer. Plants in the tropics, where there is little difference in temperature between seasons, are always evergreen. In northern latitudes the difference between Summer and Winter is extreme both in temperature and sunlight and the change that takes place in the plant world is most marked. Always light and warmth and growth go together and for the same reason we associate darkness, cold and rest.

House Gardening in Midwinter

The above facts disclose an obstacle to perfect success in house gardening in Midwinter that is almost insuperable. During the dark days of December and January, conditions in the house conflict entirely with nature and instead of the temperature being lowered to correspond with the shortened days, it is kept at Midsummer heat of 75° to 85° day and night. If the temperature in which flowering plants



ACACIA ARMATA

This represents another family that the house gardener could, with profit, give attention to. The flowers are yellow (see page 84)

are kept during Winter is reduced, say to 55° at night and 65° in the daytime, the best possible compromise is reached and the plants, though not producing flowers in profusion, will retain their health and respond quickly to the longer, sunnier days of Spring.

The Most Valuable Flowering Plant

In the same class with Geraniums are the various Begonias. *Begonia semperflorens* is the most valuable flowering plant of all, being easy of cultivation, exceedingly beautiful and truly everblooming. The best variety is *Prima Donna*, a pleasing shade of pink, of strong growth and shapely habit. The only red one, not quite as robust as the above, but very desirable, is *Luminosa*. There are also among Begonias those very useful varieties that have beautiful foliage as well as flowers, such as *Metallica Saundersoni*, *Haageana* and many others. They are all easy of cultivation and very ornamental plants. *Begonia rex*, or *Royal Begonia*, is still another species with large, richly colored leaves, that should be represented in every collection, also the now common *Begonia Gloire de Lorraine*.

Abutilon

This is a hardy decorative plant of which many varieties are useful as window plants, particularly in a sunparlor or conservatory. Some are of drooping habit, with green and gold blotched leaves and a profusion of bell-shaped, reddish colored flowers and are suitable for brackets, high shelves and hanging



A SIMPLY TRAINED RAMBLER ROSE
(see pages 80 and 117)

baskets. Others are of upright habit with ornamental flowers ranging through white, yellow, bronze and striped.

Heliotrope

Can scarcely be called everblooming, as it insists on going to rest in the darkest days of Winter. For a long time in the Fall, however, and again in the Spring, it may be induced to yield its delicious blooms, provided it be given the sunniest niche in the sunniest window.

Roses

Of the Tea and Hybrid Tea varieties will grow and flower in the house during Fall and Spring under exceptionally good conditions (which always means abundant sunlight). The same preparation and care as recommended for the Geranium will suit them admirably. The old-fashioned Teas, Bon Silene and Safrano are good varieties to experiment with.

The Beautiful Cyclamen

The above comprise a first choice among the ever-blooming plants that are suitable for house culture in this climate. Fortunately, we are not dependent wholly on this class for flowers in Midwinter, but have, as before explained, a wealth of bulbous and shrubby plants that have prepared their flowers in Summer and stand ready to produce them at almost any time to man's reasonable order. First among them is the Cyclamen and well it deserves this distinction, for nothing is more gorgeous for its size than this compact, shapely plant, covered with some-



POLYANTHA or BABY RAMBLER ROSE
(see pages 80 and 117)

times as many as a hundred flowers as an exhibition plant and always with enough to make it attractive even in the darkest days of Winter. Cyclamen demand a little less sunlight than the plants in the above list and so may well be placed in east or west windows during the early Winter and Spring months. During the Midwinter season, however, all the sunlight that is available will not be too much for any of them.



YOUNG PLANT OF CYCLAMEN

Just commencing to flower in October. By spreading the leaves apart, innumerable healthy flower buds are visible on every well grown plant (see pages 80 and 117)

Carnations

Such as are grown for cut flowers by florists are strictly everblooming plants by nature. If prepared as directed for Geraniums and so forth, they will blossom through the early Winter months and commence again in Spring.

Primula Sinensis

Is an old favorite and will flower all Winter. Some of the most shapely and altogether most attractive plants we have seen of this China Primrose, were grown by a farmer's daughter in the living room window. There is a spicy fragrance to the leaves that is enjoyable.



PRIMULA SINENSIS

This particular plant is just commencing to flower

Dutch Bulbs

All the different Dutch bulbs, such as Hyacinths, Tulips, Daffodils, etc., belong to this group and form a very important part of it. They furnish perfect examples of stored-up energy in a plant. In their case, the process has been so complete as to need little or no sunlight to enable them to produce their beautiful and sometimes gorgeous flowers in the very depths of Winter. In order that the pleasure of seeing them develop may be long drawn out, the plants should be purchased as they are starting to grow, say two inches above the pot.

Other Examples of Stored Up Energy

Azaleas and the hardy, Spring flowering shrubs and herbaceous plants, such as Lilacs, Acacias, Camellias, Genistas, Chrysanthemums, Dielytras (Bleeding Heart), have all the same faculty of creating and storing their flowers months before they intend to display them, though not in such complete degree as the bulbs. They need a little more assistance in the way of preparation in pots during the Summer and a fairly light place in the Fall and early Winter to enable them to produce their flowers a few months ahead of the natural schedule. The most difficult feature in their cultivation as house plants lies in the proper care to be given them after flowering, that is, if they are to be preserved through another year. As a rule, shrubs of this class have very little decorative value after they are through flowering, yet to do them justice during the two or three months that must elapse before they can be put out-of-doors, they should have the best places in the house.

The Final Disposition

Unless one has a garden and proposes to grow them on for future use, perhaps the best course, though somewhat shocking, is to throw them on the rubbish heap as soon as they have passed the ornamental stage. In fact, the rubbish pile is regarded as a very valuable adjunct to every well conducted gardening establishment. Very little sentiment is displayed at this stage of the game, all effort having been exerted to properly care for the plants while they were alive and useful.



PRIMULA SINENSIS

Undoubtedly a gem among plants for indoors. Some of the finest are grown from start to finish in cottage windows (see page 83)

Chapter V

BULBOUS PLANTS

A Pleasant Occupation

TO any one having a garden, even though of small size, associated with the home, the growing of a few bulbs in pots is a most pleasing occupation. Those commonly called Dutch, or Holland bulbs form the most practical collection for this purpose and at the same time furnish a diversity of form and color that satisfy every desire for variety. Besides the garden plot, a cold or cool cellar is necessary, the essential condition to success being that the bulbs be given a long period of cool treatment before being brought into the house to flower.

Cultural Hints

Plant the bulbs in six- or seven-inch pots or pans, a pan being a shallow pot, using any garden soil. Plant the bulbs thickly, say the width of the bulb between each bulb. It is useless to waste valuable room and labor on a few bulbs, and besides, they do not look well when sparsely scattered. It is not necessary that the bulbs be wholly covered, but it is important that enough soil be underneath to facilitate an abundant root growth. Water them thoroughly at this time—in fact, from now on they should never be allowed to become dry. Bury the pots in the garden under six inches or so of soil and leave them there until the



NICELY FLOWERED POT OF NARCISSUS
(see page 86)

middle of December, or later if there is no danger of frost reaching the pots and breaking them. At the end of this period they will have formed shoots two inches tall and filled the pots entirely with white, fleshy roots. They may be brought into the cold cellar, whence little batches can be taken from time to time and placed in the windows of the parlor and allowed to flower, the kinds marked "early," being selected first and even these should not be expected to flower until the middle of January.

Burying the Pots

Referring to the process of burying them in the ground after the bulbs are potted, select a space in the garden of any convenient shape and of an area sufficient to hold them when the pots touch each other. Dig out the soil from the entire area and six inches or seven inches deep and pile it around the edges. Set the pots and pans into this shallow pit and once more water them thoroughly; then cover all over with the soil that was dug out. Be careful that there are no large stones over the pots or the young shoots will run foul of them and break their necks in the effort to push up to the daylight. The reason for burying them is to hold the bulbs down in the pots when the roots commence to push and to keep them moist and cool. Early in October is the proper time to do the work.

Hyacinths in Glasses

Hyacinths grown in water in the conventional glasses should be kept in a dark, cold cellar until such



PAN OF WHITE CROCUSES

Nothing is daintier for the living-room than these easily grown bulbs
(see page 86)

time as the glasses are well filled with roots and then may be brought up in the same way as those in pots. When first planted the base of the bulb must touch the water; after a plentiful supply of roots has formed, it is not necessary. Only first size (largest) bulbs should be used for growing in this way.



POT OF DUTCH HYACINTHS

One can almost smell the flowers! They like a cool room (see page 86)



A BOWL OF PAPERWHITE NARCISSUS

Some people are uncertain as to which end of the bulb should be uppermost. This picture shows the roots of a bulb after having been in pebbles and water for a week. This outfit, by the way, sells for about 50 cts., and makes an acceptable gift (see page 97)

Abundance of Roots

The essential point to remember, regardless of dates or temperatures, is that the plants must have an abundance of roots, the lower part of the pots being packed with them, in fact, before they are fit to be brought into the warm room to flower, and the place most congenial to them during that early period of root forming is the cool, moist earth.

Desirable Varieties to Grow

The following varieties of Dutch bulbs are good for pot culture:

DUTCH HYACINTHS

La Grandesse. Pure white; large.

Gertrude. Bright pink.

Gigantea. Delicate pink.



Other dishes of Paperwhite Narcissus, in pebbles and water
(see page 97)

- Lady Derby. Rosy pink.
L'Innocence. Pure white.
Grand Maitre. Deep lavender blue.
King of Blues. Deep blue.
Queen of Blues. Light blue.



POT OF DOUBLE DAFFODILS

The Orange Phoenix and Sulphur Phoenix, commonly called Eggs and Bacon, and Codlins and Cream, respectively, as well as the common yellow, are recommendable (see page 86)

TULIPS

Early—Single.

La Reine. White, tinted pink.

Mon Tresor. Yellow.

Proserpine. Rich deep rose.

Vermilion Brilliant.

Medium—Single.

Prince of Austria. Orange.

Rose Luisante. Deep pink.

Medium—Double.

Couronne d'Or. Yellow shaded.

Murillo. Blush white, and pink.

Tea Rose. Saffron yellow.

Late—Single.

Couleur Cardinal. Rich crimson.

Late—Double

Imperator Rubrorum. Bright scarlet.

Pride of Haarlem. (Darwin.) Rich deep rose.

NARCISSUS—Medium

Large Trumpet Narcissus.

Bicolor Victoria.

Emperor. Large bicolored.

Golden Spur. Clear Yellow.

Double Sweet-scented.

Campernelle.

Double-Flowering.

Von Sion.

*Poeticus ornatus.**Polyanthus Narcissus.*

Paperwhite grandiflora.

CROCUSES come early in the Spring. They do well in a window and the Dutch varieties are obtainable in bright yellow, deep purple, white and variegated.

SCILLA SIBIRICA comes with the Crocuses. It is a neat little flower with ultramarine blue flowers.

SNOWDROPS are not half often enough used as pot plants.



Pan of mixed Dutch Hyacinths in fancy dish (see pages 86, 92 and 93)

The Roman Hyacinth

Is a south of France species, white in color, throwing up a number of small spikes. Its chief value lies in the fact that it can be brought into flower much earlier than the Dutch varieties. It should be potted as soon as received in early September and treated in the manner indicated above, when it will be ready to flower by the middle of November.



Muscari botryoides alba—White Grape Hyacinth
(see page 86)

Narcissus grandiflora (*Paperwhite Narcissus*)

Is also a southern French bulb and is ready to flower when received in September. Placed in a dish two-thirds filled with pebbles, in which the bulbs are buried half their depth, and water enough at all times to reach the base of the bulbs, as in the case of the Hyacinths in glasses, these may be placed in a warm room immediately and will begin to grow without any more attention and will flower in six weeks. Successive dishes should be planted at intervals of a week or so and a supply of these popular flowers can be maintained throughout the Winter.



Hyacinth glass containing Chinese Sacred Lily (*Narcissus*) bulb (see page 88)

Chapter VI

HOUSE PLANTS OUT-OF-DOORS IN SUMMER

Value of a Garden for Preserving Plants

PEOPLE who live in the city, or any place for that matter where they have no garden, have to face the necessity of disposing of their house plants in the Spring. This is really a distressing experience with most people, especially in the case of plants that have been given them as tokens of affectionate remembrance.

Those who possess a garden with a few shade trees, however, may derive an endless amount of pleasure by preserving many of their plants from year to year and at the same time gain valuable experience that is difficult to acquire in any other way. Indeed, it is only in the garden that the true joy of plant companionship may be experienced or the "right relationship," to which allusion has been made, can be established.

Shade and Sunlight

If there is a diversity of aspect to the garden, such as shelter from winds, various degrees of shade as well as clear sunlight, then almost all the plants mentioned in the foregoing pages may be successfully



A Geranium plant after a Winter indoors (see page 101)

grown on from year to year and many new ones propagated. By dense shade is meant such as is given by Maple trees for instance, that are so disposed as to exclude the direct rays of the sun at all times and from which the lower branches have been trimmed off to within six or eight feet of the ground. Even here, the light percolates through the foliage and the shade, though called "dense," is vastly different from that cast by the walls of a house on the north side.

Moderate shade is that given by Apple trees and pines, or by Elm trees whose branches are at a great height, or small trees of almost any kind that would shade the plants through the hottest part of the day and allow the sun to reach them in the early morning and late afternoon. Any shade mentioned here does not refer to that cast by buildings. Very few plants will endure a position close to the walls of a house, not even those that in nature grow under trees.

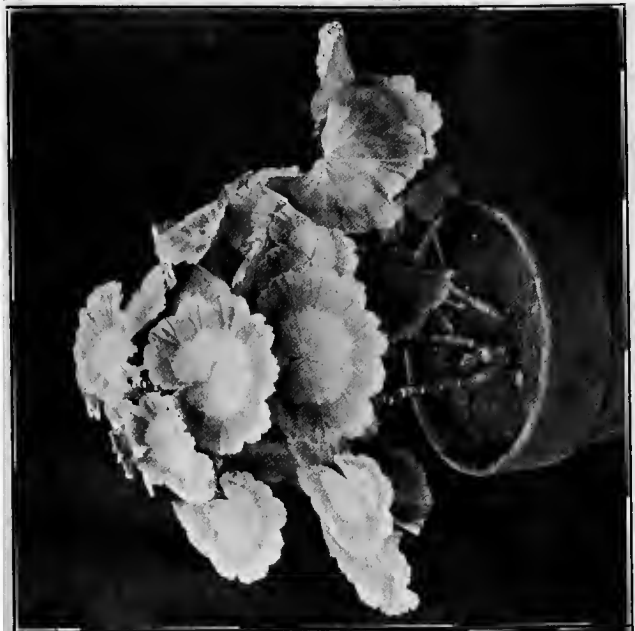
Full sunlight means just what the words imply—an open space away from trees and house.

Good Water Supply a Necessity

Abundance of water is as important in the garden as the house and provision should be made for a goodly supply close at hand. Rain, even when heavy and quite frequent, should not be relied upon to furnish water for potted plants. A tumbler full of water to a plant in a six-inch pot would be the equivalent of a heavy downpour of rain for half a day, so that one may easily imagine what small value a light refreshing shower would have, excepting to wash the dust from the leaves.



The same Geranium as shown on page 99 pruned and ready for root treatment, that is to say, to have the old soil in the pot shaken away and a repotting given to the plant (see pages 104 to 110)



Geranium in nice shape and condition for taking indoors in the Fall. It is firm wooded and bushy, with a good furnishing of foliage

When and How to Shift the Plants

As soon as possible after the first of May, all the house plants should be taken to the garden and assembled in a shady place where one can work in comfort and where the roots when exposed will not be injured by the sun. Here also a potting bench should be provided, say a few boards, or a door, or shutter laid on the top of two barrels, and a supply of soil prepared. This latter should consist of loam that has formed six or eight inches of the top layer of land on which grass has been growing, preferably land on which cattle have been pastured. The thinnest possible skimming of sod should be taken off and thrown away to get rid of the actual grass, but the fibrous layer immediately below, which is rich in humus and beneficent bacteria and has long life and fertility, must be religiously saved. Brown or yellowish upland soil is better than the black stuff found in low, moist situations.

An Ancient Fallacy

There is a popular superstition that this bog or black peat has wonderful growing qualities. Unfortunately, this fallacy has extended even to professional gardeners, who should have known better, with the result of many a failure and disappointment not only among potted plants, but in gardens and lawns also.

Preparing the Soil

If the available loam is light in color and inclined to be stony, add to it one-third old leafmold, that is,

leaves of trees that have become reduced, by years of decay, almost to a powder. Have an extra supply of this on hand so that some more may be added for the ferns when their turn comes, to make the mixture about half loam and half leafmold. If the loam is sticky, like clay, some fine sand may be added, say 10%, otherwise sand is of little or no value, especially



The Genista of the florists, botanically called *Cytisus fragrans*, with rich yellow flowers (see page 105)

coarse sand. A few cracked pots that may be broken up for drainage, a little moss out of the woods, also for drainage, two or three potting sticks from a piece of shingle to a section of a broom handle, will complete the equipment.

Chop up the loam and rub it through a coarse sieve, say three-quarter inch mesh, all the grass roots going through and only the stones being thrown away. Sift the leafmold to remove stones and sticks and mix the two together on the bench.

Best Periods for Repotting

Taking the foliage plants as the first group (see page 117), commence with the largest plant; take it carefully out of its pot; examine the roots and soil. If the plant is in a very healthy condition, the roots should by this time occupy every bit of the bole of earth and be quite matted around the bottom. In that case, it may be taken for granted that the top has grown in a corresponding way and the whole plant is in a healthy, hungry condition, also that the pot is relatively small. Seldom does a house plant reach the time of year in question in good condition, if it has been in an oversized pot, for reasons previously explained. Now, however, it has got to a point where it must be put into a larger pot and this is the best time of year for the purpose. The reason for this is simple, although contrary to the popular notion, that plants should be repotted just before bringing them into the house in the Fall. Spring and Summer are the periods of greatest energy in the plant world. In the Spring, especially, the vitality of most plants is abundant, enabling them to withstand the shock of repotting



(b) The same Genista as shown on page 103, after having been pruned and the roots loosened and made ready for a size smaller pot to start with in the Spring. Genistas should always be kept in a pot, for if planted out in the Summer, it is almost impossible to lift them in the Fall

and impelling them to form new roots, immediately followed by a sturdy top growth. With the whole Summer before them in which to occupy the new soil and acquire strength and vigor, they will be in fine condition in the Fall to brave the hardships of Winter. This reasoning is logical and is sustained by the facts.

A few pots a size or two larger than those occupied by the largest plants should be on hand, then after the potting has commenced, there will be enough to follow down the line, as old second hand pots are just as good as new.

Crocking and Drainage

Coming back to the palm or rubber plant, say, that has been knocked out and examined and supposing it to have been in a five-inch pot, it will now need a seven-inch. This gives it a space all around of one inch and enough space in depth to allow of new drainage. This drainage, that has been referred to so frequently, consists simply of placing in the bottom of the pot a piece of broken flowerpot large enough to lie there loosely and still well covering it, with the concave side down. On top of this is placed a thin layer, say one-half inch of broken charcoal, of the size of peas and beans and then a thin layer of about one-quarter inch, when pressed down, of the moss before referred to. The function of this little group is to allow all superfluous water to pass freely from the pot. One hole is easily sealed up with the mud that inevitably settles down toward the bottom, but with the little arch of crock keeping the hole free and the porous layer of charcoal presenting many small channels for the water to pass through, this



(a) Showing the proper way of "knocking" a plant out of a pot. With the hands in the position shown, drop the edge of the inverted pot with considerable force on the edge of potting bench, when the plant will slip out of the pot into the hand, as shown in the next illustration (b) (see page 106)

filter in turn being kept clean by the layer of moss, one can readily see that it is almost impossible for a pot so equipped to become waterlogged. Having "crooked" the pot, as the old gardeners say, it is ready for the plant.



(b) Showing the plant out of the 5 in. pot and ready to have the roots and soil loosened up as in (c) (see page 106)

Disentangling Matted Roots

This latter needs some attention, however, before potting, seeing that the roots are in the matted condition assumed. If allowed to remain this way, they will keep on matting and will make such an impene-



(c) Showing the roots that were matted among the drainage and around the side of pot, now loosened up and ready for the new pot (see page 110).

trable wall that any young roots forming inside cannot pass through and the plant might as well have remained in its old pot. Lay the plant down on the bench and hold it firmly with one hand; with the other, take the carving fork or some such implement and tear away the coils of roots that have formed around the drainage. This calls for no gentle hand, but a vigorous dissection and disentanglement of the whole matted structure. Indeed, if this coil around the drainage is very badly matted, it had better be cut clean off with an old carving knife; in either event, the broken roots should be cut off. After this, the less matted roots around the upper part of the bole may be more gently "pricked" loose with the fork.

Repotting the Plant

The plant is now ready to be potted. Try it in the pot first to see if it sets too deeply, if so, fill in a little soil until the top of the bole is about one inch below the top of the pot. Fill in all around the bole now with the new soil, until half the required quantity is in. Then, after giving the whole thing a short, vigorous shake to settle the plant and soil in position, commence to firm down the latter with a potting stick that will pass freely down between the bole and the pot without injuring the roots. After ramming this layer quite firmly, fill in some more, firming this again and so on until the desired level is reached. The soil should be so firm that it will resist any further pressure by the fingers and thumbs.

Water-logged Soil

So much for all the plants, regardless of name,

that are in the condition indicated. As a rule, a large majority of them, when examined, are in very different shape. A mass of black water-logged soil with scarcely a root visible and the drainage such as it was, long since filled with mud and useless, is



(d) The plant having been repotted into a 7 in. pot has been carefully "knocked" out to show the firmly compacted soil, liberal drainage and moss intervening as described in the text (see page 110)

generally the sort of thing which meets the eye. Such plants will assuredly go back into the same size pots they were in, or smaller. Take the carving fork and dig away all the old soil without the least compunction, until something like a "bole" is discovered. Even then, dig away among any live roots that may be there and reduce the mass to a point where there is danger of breaking these roots, after which the plant may be fitted to a pot commensurate with the size of



(A) Before

(B) After

Two pictures showing the proper pruning or trimming to be given an old scrawny Azalea, and treatment of the roots before planting out in the garden in the Spring

the bole and potted in the regular way. Sometimes when plants are in very bad condition in this respect, the best thing to do is to wash every bit of soil away from the roots with a stream from the hose and very carefully repot it, distributing the roots through the bulk of soil, rather than bunching them.



This Azalea has been grown for several years in an ordinary garden in the Summer time and is equal to any newly imported plant (see pages 84 and 112)

Small Pots

Pots of small size (three or four-inch) do not require such elaborate drainage. Just a simple crock placed concave side down over the hole is sufficient. Also, it may not be expedient to allow an increase of two inches in the larger sized pots. An increase of one inch in diameter will give the narrow space of one-half an inch around the bole. In this case, great care is needed to see that the loam is well distributed around the bole, as it is inclined to jam on



Jerusalem Cherry pruned in the Spring before plunging in the garden. Like the Genista, this plant should be grown in a pot all the time as its roots spread so much that it is very difficult to "lift" it in the Fall without serious injury. The roots may, however, be separated and reduced in bulk at the time of pruning as in the case of the Genista (see pages 103 and 105)

its way down and never reach the bottom. A very thin potting stick is necessary to accomplish this, care being also taken to fill in the loam very gradually.

Flowering Plants now Require Treatment

As fast as the plants are potted, they should be set together in a shady place and well watered. The flowering plants may be now taken in hand and sorted over. Any that are "annuals" of course are



NICE SPECIMEN OF JERUSALEM CHERRY

Grown in an ordinary garden and ready for the house in the Fall. It should be noted that this has no near relationship at all to the Cherry of our orchards. It is, indeed, a member of the Potato tribe! (see page 114)

of no value and can be thrown away. All old pans of bulbs, including Easter Lilies that have accumulated in the cellar, should be emptied, the pans and pots saved for future use and the bulbs stripped of old, dry foliage and stored in a dry place until October, when they may be planted in the garden, but not used again as potted plants. All plants of a shrub



The White Syringa or Lilac, Marie Legraye (see page 117)

nature are, as a rule, worthless the second consecutive year as house plants and should be planted in the garden after the boles have been well loosened up as recommended in preparation for potting. This refers to Acacias, flowering Almonds, Lilacs, Wistarias, hardy Roses and a host of such things that are sold by florists in the Spring and which have considerable value, if one has garden room to spare for them. This reduces the collection to be potted to such flowering plants as may profitably be grown on for next Winter's use. Starting again with Geraniums, all the straggly growth should be pruned off to within two or three inches of the main stem and the shoots laid on one side in the shade to be made into cuttings later.

The small-leaved flowering Begonias (Prima Donna type), Heliotrope, Azaleas, Hydrangeas, Fuchsias, Genistas, Impatiens, Jerusalem Cherries, Abutilons, Lemon Verbenas and Coleus should all be pruned in like manner, excepting the Azaleas, which should be lightly trimmed with a pair of shears, and potted into suitable sized pots and in the same soil as already prescribed. The above four groups, foliage plants, shrubs, flowering plants and bulbs, comprise nearly every kind that is likely to come into the house during the Winter and early Spring.

The Popular Cyclamen

There remains, however, at least one popular plant that has not been included, namely, the Cyclamen. This is a rather difficult plant to hold over, still it can be done. The plant is evergreen by nature and should not be dried off like the Dutch bulbs. Its period of rest is after flowering in the Spring, when

it remains more or less dormant until August, still retaining many of its old leaves, when it will commence to form new leaves and flower buds at the same time. The plant should be repotted at this stage, removing all the old soil that is not occupied with roots and for two or three weeks afterward should be kept in moderate shade. The Cyclamen has been much improved of late years by crossing and careful selection and is now one of the most beautiful of all the cultivated flowers, as it is certainly the most popular, if all the markets of the world are considered. All of the millions that are disposed of annually are grown from seed, about fifteen months being required before the first flowers appear.

Summer Quarters

After the work of potting is finished, the plants can be placed at once, or at the first convenient time, in their permanent Summer quarters. The ideal method is to plunge, or sink them in the ground almost up to the rims of the pots. In this way, the roots are in cool, moist surroundings during the hot days of Summer, less care and watchfulness in watering is required, and much less water, and the plants do not blow over. Place a good sized piece of broken pot, concave side up, in the bottom of the hole before sinking the pot. This will prevent worms from working their way in through the hole in the bottom and will also assist in drainage.

All the foliage plants in the first group, excepting ferns, should be placed in "moderate shade," notwithstanding the fact that they are all indigenous to tropical climes and sunny positions, as before stated.



A STRONGLY FLOWERED AMARYLLIS
Also called Hippeastrum or Eastern Star

Seeing, however, that the chief object now is to train these plants to endure cheerfully the dark days of Winter in the house, it is better to keep them in moderate shade all Summer than to subject them to a violent change both Spring and Fall. All the ferns should be placed in "dense shade," and well sheltered from wind. The flowering plants may be placed in the full sunlight for reasons already explained.

The Time for Lifting

In the early Fall, say in the middle of September, everything should be lifted out of the ground, the pots washed and the drainage examined and if found to be stopped up, should be cleaned. In order to do this thoroughly, the plant should be taken out of the pot in the manner before described and the mud that has worked down among the drainage cleaned out by hand. As this mud is mainly caused by the workings of worms and as some of these creatures may still be in the bole, one or two waterings of lime water should be given to drive them out. The plants should be grouped near the house so that they may be quickly brought in at the first alarm of frost, and should be set on boards or in saucers, having in mind the aforesaid worms, which are always waiting for a chance to hunt in new soil for decaying leafmold, etc., but not for live roots.

Chapter VII

SOWING OF SEEDS AND ROOTING OF CUTTINGS

Fascinating Employment

THERE are many other activities than those mentioned in the previous chapter that may be enjoyed by anyone having the ambition as well as the garden facilities. The sowing of seed and the producing of a real plant from its very beginning is, perhaps, the most fascinating of all; being nearer to the creative than any other. The successful rooting of cuttings is also interesting.

Raising Plants from Seeds

Such plants as Antirrhinum (Snapdragon), Asparagus of both kinds mentioned, Begonias, Celosia, Calendula, Cosmos, and Impatiens may be raised from seed and grown on all Summer in pots plunged in the ground with the other flowering plants. In the early seedling days, however, *a cold frame is necessary in order to control the shade and moisture conditions.* A frame made of boards or plank six feet square will hold as much as the average amateur would need. This should be made to slope to the south enough to shed the rain; about a foot of head room is enough. Two standard hotbed sashes will be needed and that is all. A layer one or two inches deep of the soil recommended for potting and finely sifted should be

placed on the top of the garden soil that is in the frame and in this any seed may be sown. No artificial heat is necessary, the simple protection of the frame being sufficient after the first of April.

The Time for Sowing

Very little is gained by sowing seeds before the first of May, for by that time the ground is getting warm and growth once started will continue uninterrupted. The coarser seeds may be sown thinly in drills, that is, in little gutters made with a piece of stick and about one-quarter inch deep, covered over with the loam thrown up on the sides of the drill and firmed down with the hand or a light piece of board. The finer seeds, such as *Begonia semperflorens*, must be sown broadcast, as they are so small that many would be buried in the bottom of a drill ever so shallow. Plot out a piece of the frame into small squares by placing pieces of lath or shingle on edge and pressed into the soil to keep them in place. These serve to keep the different kinds of seeds separate. Empty the packet of seeds into the palm of one hand and with the thumb and forefinger of the other, take small pinches and scatter thinly and evenly over the area selected. Make a sieve by tacking a piece of mosquito wire on the frame of a small grocery box and with this cover the seed one-sixteenth of an inch thick with the prepared soil. Label every kind with name and date of sowing. Firm the surface gently and water with a very fine sprinkler. Place the sashes on the frame and shade the glass by painting with whiten- ing and water. This is the best shading and can be easily washed off and cheaply replaced when necessary.



HOW TO MAKE A CUTTING

Showing the proper way to cut the shoot so that the bruised tissues shall be on the discarded lower portion, and not on the base of the part above the knife, which is to be the cutting. This principle is important, and applies also to cutting the stems of flowers and pruning shrubs. A little experimenting and observation will show that the part of the shoot below the knife blade is rolled up and bruised, whereas the part above the blade is clean cut and will callus and heal quickly (see page 124)

Pricking off the Seedlings

One-fourth the area of the frame will most likely be ample for the seed sowing and the rest may be reserved for "pricking off" the young seedlings as soon as they are big enough to be handled by the thumb and finger. This process consists of transplanting the seedlings into orderly lines about one and one-half inches to two inches apart each way, according to the kind and size of the plants. These should be shaded heavily for a day or two after transplanting, when part of the whitening may be rubbed off and finally removed altogether. After the little plants are large enough to touch each other, they will have to be either transplanted into the open garden or put into three-inch pots and again later in the Summer into four- or five-inch pots.

Rooting Geranium and Other Cuttings

The coldframe is also a good place in which to root the Geranium cuttings that were taken from the plants when potting. These should be carefully "made," that is, cut with a sharp knife in the direction shown in illustration, page 123. The side toward which the knife blade is pulled is always bruised by the pressure and so should always be the side of the cut to be thrown away, as it is important that the tissues at the base of any cutting should be mutilated as little as possible. The soft, sappy shoots of any plant that has been all its life in a dark room are useless for cuttings and it is only a waste of time trying to root them.

✓ Cuttings may also be taken of any of the bushy kinds of Begonias, Impatiens, English Ivy, etc.



(b) The wrong way to make a cutting (see page 123)

Preparing for Spring

In July, after the frame has been emptied of the various plants mentioned, it may be used for the sowing of hardy, herbaceous perennial seeds, such as Larkspur, Hollyhocks, Phlox, etc., and the young plants of these may be "pricked off" and kept all Winter in the same place, whence they can be removed in the following Spring to the open garden in time to commence the rounds again.



A TYPICAL HYDRANGEA OTAKSA
(see page 117)

Chapter VIII

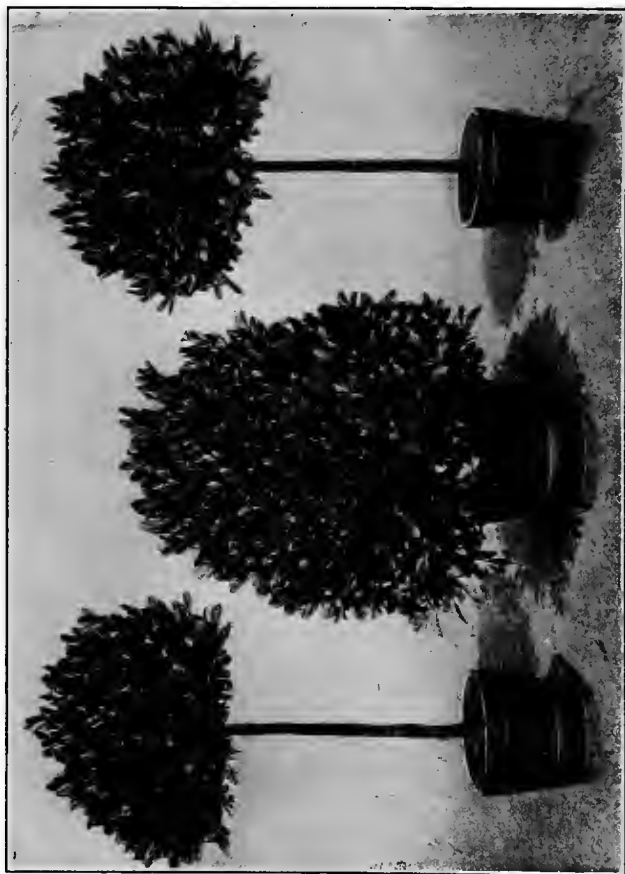
OUTSIDE WINDOW BOXES IN WINTER

A Difficult Question

THE question is frequently asked, "What plants or shrubs are suitable for outside window boxes, or piazza boxes, or to stand in cold vestibules in the Winter time?" This is a difficult question to answer in an encouraging way, especially if it refers to a climate as harsh as that of New England. It is safe to say that no plant has yet been discovered that will pass through the rigor of a New England Winter and be of much value at the end of the season.

Winter Disturbances

The best that may be hoped of any evergreen shrub exposed all Winter in a tub or box is, that it will remain unchanged in appearance until January or February. Just as soon as the sun begins to gain in warmth and the days lengthen out, conditions are set up that will quickly destroy the hardiest plant. Up to this time it has been, as it were, in cold storage, no change has taken place, every function has been dormant. Now that the first warm day begins to set the sap in circulation and demands are made on the roots to respond, these latter are still frozen in a solid block of loam and will be for weeks to come.



STANDARD AND BUSH BAY TREES IN TUBS
(see page 132)



An outdoor window box filled with *Euonymus radicans*, the Creeping Euonymus (see page 132)



This Norway Spruce has been growing in this tub one year, is well rooted, and in nice condition to withstand the Winter out of doors (see page 132)



Juniperus virginiana (Red Cedar) (see page 132)

The foliage not getting any nourishment from the frozen roots and being compelled by the warm sun to give up day by day some of its life blood by evaporation, soon begins to turn brown, curl up and eventually falls off. It is safe to say that if the roots could be kept from freezing, the tops of all our native hardy evergreens would endure our Winters with little injury.

Euonymus radicans has gone through the Winter with little permanent injury, still after the middle of January it looks very sere and shabby. Among coniferous evergreens the Junipers, especially the Chinese species, seem to be the most hardy, but even they go the way of all plants.

Shrubs in Cold Vestibules

In a cold vestibule that has a fair amount of daylight, but not much sun, and is really cold, that is, not quite freezing at night and not above 50° in the day on an average, almost any of the hardy shrubs will survive and may even thrive. Boxwood, *Euonymus*, both the bushy European species and the trailing Japanese kind, European Laurels and Junipers, Spruces, Pines, in fact any of the conifers are suitable for such situations. It is necessary that all should be pot grown and not just dug up from the nursery at the last minute. All that has been said about watering and drainage for other plants applies equally to these.

Chapter IX

INSECT PESTS AND REMEDIES

Enemies of House Plants

INSECTS, when they appear on house plants, are generally the result of sickness and not the cause, although if allowed to remain and multiply they will quickly complete the destruction of the plant. They are not, as a rule, the source of much trouble to house plants and are of a kind that may be easily destroyed.

Aphis

Aphis (green fly or lice) are the most common. They attack the soft, succulent tips of the shoots and the young leaves and so may often be immersed in the insecticide by bending the tips of the shoots down into it. This, when practicable, is a most effective way. If spraying is resorted to care should be taken to see that every insect is covered with the liquid.

Thrips

Are less common, but when present are very destructive; they attack the under side of many smooth-leaved plants, but readily succumb to the Soap Spray mixture, mentioned on page 138, when applied. The adult insect resembles a tiny flea even to its hop.

Red Spider

Is the most destructive and the most difficult to

destroy of all the smaller insects. The red creatures are too small to be seen by the naked eye save as minute moving specks on the leaves, but when sufficient numbers get together the red mass is quite apparent. The minute larvae, when hatched immediately, cover themselves with a fine web which thoroughly protects them and allows them to pursue their depredations undisturbed; it is this web, in fact, which prevents the effective use of insecticides. A fine cutting spray of plain water from the hose will clean them off and is really the only thing to do when the plant is badly infested.

Scale Insects

Are well known pests on house plants, being conspicuous in size and color and always remaining in the spot chosen. The scale is a protecting roof covering the female while she is producing her eggs or young ones, some species being viviparous, *i. e.*, producing their young alive. By the time the young ones are ready to crawl out from under the scale the mother insect has died. The males of many species are never seen except under special culture. They are minute, two-winged flies and live only a day or two. The scales may be washed off by hand with a sponge and soap suds if only a few appear; if such plants as palms or ficus are badly infested with them they should be soaked for two or three hours with the soap spray and then laid on their sides (as shown in the illustration, page 135) and forcefully sprayed with a stream from a hose.



Showing an effective method of removing insects from palms, Rubber plants, Dracænas or any plants except those with very fragile leaves. Even the most tenacious scale pests yield to this "hydraulic" treatment, and for aphides (as green and black fly) and similar soft insects the force of the spray may be reduced so that the most tender shoots will not be injured (see page 134)

White Fly

Curiously enough, belongs to the scale insect family, and is the one case in which the male insects appear in large numbers and fly about the infested plants freely. It is of somewhat modern introduction and was first studied and described in the United States about twenty years ago. The young are produced on the under side of leaves and in great numbers; they are most voracious and will quickly suck the life from the most robust foliage. They are also protected by a hard white waxy substance and until the insecticide mentioned on page 138 was introduced nothing had been found that would destroy them that was not otherwise dangerous to the plants. They generally attack plants with soft leaves that will not stand the hose spray, so in this case that remedy cannot be applied.

The Common Worm

Seldom, or never, do insects attack the roots of house plants and the common worm, at whose door more charges are laid than at all the others put together, is the most innocent. He is a nuisance, however, and though he does not eat the roots as charged he tunnels round and through the bole of earth in search of leafmold or other decaying vegetable matter to such an extent as to reduce the whole mass to fine mud. This is not only unpalatable to the roots of the plants but invariably the worm works his way down into the drainage, rendering it of little or no effect. His presence in the soil is indicated by the little hillocks of mud which are thrown up on the sur-

face. When these symptoms appear a dose of lime water should be applied. This will either kill him or drive him in a moment or two wriggling to the surface whence he can be removed without ceremony. The lime water can be made by steeping a lump of common builder's lime in water and after it has settled the clear water on top is ready for use. Where a number of plants are on hand some of this water should be always available. A good plan when passing a building in course of construction is to secure a good sized lump of lime, say two pounds in weight, which will cost little and often nothing, and take it home. Steep it in a large pailfull of water and after it has settled bottle the clear water and keep it for future use. A small quantity may, of course, be procured at a drug store. Occasional waterings (once a month) are not injurious to any plants except Azaleas, and these are seldom troubled by worms.

Sucking Insects

The insects mentioned above are all of the sucking kind, as distinguished from those that chew up the leaves or shoots bodily. The kinds of insecticides that will destroy the latter are entirely harmless to the former. This is an important fact and should be well understood, particularly by those who have the care of a garden out of doors as well as their house plants. The sucking insects, as their name implies, obtain their food by piercing through the tender leaves or shoots and sucking the juice from the inside, consequently it is useless to offer them poison, as they cannot eat it. They breathe through innumerable little pores scattered all over their bodies, however, and this

is a very vulnerable point of attack. A mixture of Ivory Soap suds and extract of nicotine (tobacco) has been found most effective in stopping up these pores and quickly suffocating the insect. An excellent preparation was put upon the market some years ago called Imperial Soap Spray, which is most effective in the destruction of these insects. Instructions come with these preparations. It is necessary when spraying or dipping, that all the insects be thoroughly "wetted." Fumes from burning tobacco are also fatal, but as this requires some skill in applying, and as special facilities for its use are generally lacking in the home, it is not considered a practical way.

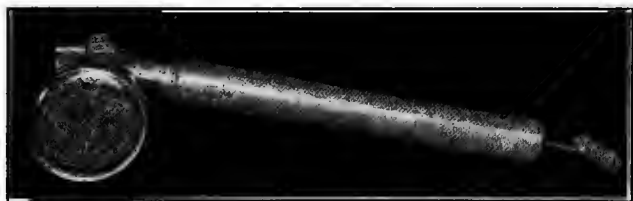
Chewing Insects

Insects of the biting or chewing kind, such as cut worms, brown tail moths, gypsy moths, canker worms and rose bugs, that make such disastrous onslaughts on out-of-door crops, do all their destructive work while in the caterpillar stage and may be destroyed by spraying arsenate of lead on their food.

Diseases

Very few diseases, as the word is commonly understood, attack house plants. Whenever symptoms of sickness appear, such as leaves turning yellow and falling from a rubber plant, tips of palm leaves turning brown, flower buds attaining a certain size and then shrivelling up, they can always be traced to neglect of the fundamentals which have been explained, and somewhat persistently reiterated, in the

foregoing pages. It should be realized that a plant which has become sickly cannot be cured by simply repotting it and returning it to its old environment. Repotting may be necessary to a sick plant, but it should be accompanied by expert hospital treatment. Generally speaking, repotting is simply giving more food to a healthy, hungry subject, and the same is true of the application of any artificial fertilizer.



THE INSECTICIDE SPRAYER

An inexpensive and effective implement for all kinds of liquid insecticides.



Vase of Gladioli, with a few sprays of *Asparagus Sprengeri*, showing the effectiveness of half a dozen sprays in an appropriate vase (see page 152)

Chapter X

HOW TO TREAT CUT FLOWERS

Flowers Require Intelligent First Aid

IN order to take intelligent care of cut flowers and keep them fresh as long as possible, it is necessary to realize that they are still parts of living plants and not pieces of ribbon cut from a roll or other inanimate articles used for decoration. No phase of animal life of course is quite parallel to the status of cut flowers; nevertheless, it is well to think of them as living things that have been wounded and mutilated, and that from the moment they are severed from the plant require prompt and intelligent "first aid." The function of perspiration, or evaporation, before referred to as inherent to the leaves on the plant, still continues after the stem, with leaves and flower attached, has been cut. The numberless channels that have been conducting nourishment to them from the roots are severed and wilting quickly takes place. More disastrous still to the future of the cut flower is the rapid closing and shriveling of the ends of the small tubes where severed, if allowed to remain out of water any length of time. All of these conditions are aggravated by heat and a dry atmosphere, and together are the causes of the rapid destruction of cut flowers when they are carelessly handled. Many close students of the subject assert that a distinct shock to the cut flowers takes place on amputation, which causes the closing of the tubes unless plunged

in water immediately, and claim that experiments with Peonies proved that if the stem when cut was plunged immediately into deep water, not more than a second or two elapsing, the flower would remain fresh many hours longer than one that was allowed to remain out of water even five minutes. As long as this does not conflict with our line of reasoning the shock theory may well be accepted.

The one simple and fundamental fact to remember is that all wilting is caused by evaporation, that is, the drying out of the natural moisture of the foliage and flowers, just as a wet cloth would become dry if spread out in a dry, warm atmosphere. Wilting of cut flowers is not in the least a sign of age or staleness, but indicates that they have not received care or intelligent treatment.

The Remedy

Seeing that the destruction of cut flowers is caused by reason of their inability to draw up from the water sufficient moisture to supply the waste, it is obvious that anything that will reverse the above conditions, or even mitigate them, is the remedy to be applied. It will be well perhaps to state these somewhat categorically:

First—Flowers, or foliage, should always be cut in the early morning or late evening, never in the middle of a bright day, as then the flower is already somewhat wilted and is in no condition to withstand the shock.

Second—Instead of a gathering basket, a pail of ample size and half full of water should be taken into the garden, and into this the flowers put, a few at a time, with as little delay as possible.



A pretty centerpiece for table decoration, simple and inexpensive (see page 148)

Third—A sharp knife is preferable to scissors, the cut made by the former leaving the ends of the little tubes open whereas the compression cut of the shears crushes them.

Fourth—The shorter the stem the longer the life of the cut flower and vice versa is an axiom worth remembering. This applies especially to hard wooded stems such as *Chrysanthemums* possess, but is applicable to all, and so *flowers should be cut at first* with as short stems as are to be used in their final positions.

Fifth—When flowers are received from a florist they should be immediately unpacked and put in water. If they have been a long time in transit the ends of the stems should be freshly cut with a sharp knife and the flowers placed in water and put into a cool place. Roses freshly cut in a warm greenhouse are in no condition for immediate use in the dry, heated atmosphere of the dwelling-house; they should be placed in a florist's ice-chest, where the temperature is 45°-50° F., and kept there in vases of water for at least twelve hours before using. If it is desired to keep them a long time for some special occasion they can be wrapped snugly in the wax paper that florists use, making an air-tight bundle—not as much to exclude the air as to keep their own juices from evaporating—their stems of course being always in water. Constantly cutting off the bottoms of the stems is also a help until finally the Roses that were received with stems over eighteen inches long will come to an honorable end, sometimes ten days after, floating in the modern dish with no stem at all.

Effective Arrangement of Flowers

With regard to the arrangement of cut flowers,



BASKET OF KILLARNEY ROSES

To stand on table in front hall or some other prominent place on special occasions (see page 152)

little assistance can be given, as it is largely a question of personal taste being applied to current fashion. One of the great mysteries of human nature is the serious regard given by the most intelligent people to the decrees of fashion in dress, manners, speech, decoration of the home and so forth, the source and authority for the decree being entirely unknown and the passing of the fashion unnoticed. Fashions in flowers have been quite as arbitrary as any others and quite as religiously followed, and the mystery still exists as to why an arrangement of colors and forms that would shock one generation should be perfectly satisfactory to another.

Present-day Fashions

Happily, in the evolution of taste the somewhat vulgar displays of huge bunches of expensive long-stemmed flowers are passing and more simple and less ostentatious schemes are in vogue. The American Beauty, which rose and reigned and fell during the twenty-five years just past, is an appropriate emblem of the period. Before that we had the so-called Dutch or Colonial bouquets in cut flowers and carpet bedding in the garden. Everything then was short stemmed, geometrical and artificial; today the ultra-simple is the fashion. A flat dish with one long-stemmed Rose standing up and three or four without any stems whatever floating at its base is considered by many the "dearest thing" in table decoration and the other extreme is reached. Ten or fifteen years ago the one-color scheme of decoration was almost a fetich so that not only one room but the whole house was at times given over to white, or yellow, or pink

simply because it was proper. Now everybody, for some mysterious reason, likes a mixture of colors; all of which goes to prove that if there are any fixed laws in art they are not exactly like those of the Medes and Persians.



Basket made up of Marigolds and Dahlias with a few sprays of Asparagus Sprengeri. The colors are orange and yellow in a light blue basket, and moss was used to hold the flowers loosely in place. Many other combinations, of course, can be used to equal advantage. As a simple artistic arrangement this basket fully expresses the author's ideal (see page 152)

Indoor Floral Decorations

In ordinary everyday life no attempt should be made to decorate the rooms with flowers, but rather they should be placed about the living-rooms in vases and bowls according to the natural form of the flowers, and in such positions that their beauty and fragrance can be enjoyed by everyone in the house. Most flowers show to best advantage when viewed from above and consequently should be placed on tables and low stands rather than on mantles or bookcases. Short-stemmed flowers, such as Pansies, Nasturtiums, Violets, Lilies of the Valley, and Sweet Peas, look best in low bowls with the individual flowers well separated from each other, either by their own or other suitable foliage. This is not only a provision of economy, but also presents the flowers in their individual beauty, and one soon begins to know and appreciate them as flowers rather than as bunches. Tall, stately flowers require tall, stately vases of ample capacity and stability. One cannot contemplate a vase of tall, heavy flowers with serenity if it is tottering on a narrow, unstable base, or if it is not large enough to give the appearance of an ample supply of water for the sustenance of the flowers. Vases and bowls of various sizes and shapes should be on hand in every house having a garden so that the different flowers, as the seasons unfold them, may have their suitable receptacles.

Flowers on Party Occasions

When many guests are to be entertained, flowers may be used legitimately for decorative purposes. One important change in conditions will obtain on

such occasions, that is, all the lower portion of the rooms which are usually free and open will be occupied by throngs of guests; consequently, all the lower vistas and lines of vision will be cut off and flowers to be effective, or even seen, must be placed above the shoulder level. Mantels and tall bookcases are then the proper places. Vistas through lines of open doors are most important considerations. Flowers on the



A PRETTY CENTERPIECE

A Japanese bowl, a thin vase with two or three long-stemmed flowers, and one or two stemless ones to float on the surface of the water, together with such simple adjuncts as a bird or butterfly, make this arrangement (see page 148)

dinner table, which on ordinary domestic occasions should be low and unobtrusive, may now take on the boldest aspect of any in the house. Certainly a glimpse of gorgeous flowers shining above the shoulders of assembled guests and waiters is an appetizing sight before the event and a pleasant memory afterward. The most important point of view, however, is that of the guest on entering the house. The vision that strikes him then will be his first and most lasting impression. Every effort should be made to give the appearance of welcome and good cheer. A handsome vase or handled basket of warm, cheery flowers should be placed on a table quite near the door and for similar reasons a pretty and rather delicate vase of flowers may be put in each of the dressing-rooms. These things will remain as a pleasant memory with the guests long after the music and luncheon have faded away.

As Gifts to Distant Friends

Flowers that have just been picked from the garden and are to be sent as a gift to a distant friend should be placed in water in a cool cellar several hours before being packed and shipped. A handled basket fitted with a lining that will hold water makes a very pretty and practical method of conveying such a gift. Fill the tin loosely with green sheet moss, which may be obtained from any florist, and add water until within an inch or two of the top. Into this the flower stems may be easily stabbed, using a lead pencil or pointed stick if the stems are soft, the moss not only keeping the flowers in position, but also preventing the water from slopping over.



A substantial vase for holding long-stemmed Chrysanthemums (see page 148)

Fixing in a Vase

When arranging flowers in an ordinary vase without moss much time may be saved, and better work done, by grouping the flowers in the hand first, then sliding them bodily into the vase, rather than by sticking them into the vase one by one in the conventional amateur manner.

A Good Lining

An ordinary flower pot that is sound makes an excellent "liner" for a basket. The hole in the bottom of the pot can be stopped tightly with a cork and green sheet moss used as suggested previously. The moss is a very useful adjunct, much superior to sand, and it may be kept on hand indefinitely in a cool, moist place.

First-hand Study of Flowers

With regard to the artistic arrangement of flowers the greatest pleasure can be derived from studying the subject at first hand in one's own home and garden. No one need be enslaved by the views of another. Even Nature herself is often ugly and grotesque in her associations and cannot be blindly followed. On the other hand, art can be cultivated and to this end the study of work of more advanced students is profitable. Abundant practice is also valuable in that it enables one to develop with quickness and certainty a mental picture that would otherwise never materialize. Finally, the comforting thought remains that these practice pictures quickly fade and give opportunity for fresh efforts with no waste of canvas and pigments or accumulation of crude attempts with the brush to bring a blush in future years.

Chapter XI

SUN PARLORS AS PLANT ROOMS

Their Many Advantages

THAT it is possible to keep many kinds of plants in an ordinary dwelling house having ample window space goes without saying. Those who love the work and are willing to give constant and intelligent care to it often get wonderful results in spite of adverse conditions. In the course of time and experience, however, they realize their limitations and the pleasure of seeing their pets survive the Winter is inevitably marred by watching their steady decline in health and robustness. All that can possibly be done in order to attain success under the circumstances has been pointed out in the preceding chapters and, to the enthusiastic plant lover, this success is sufficient reward. Indeed, the triumphing over adverse conditions has a fascination alone worth while.

Sooner or later, however, those who are truly enthusiastic over plant growing become dissatisfied with the limited possibilities of a windowsill and long for a place in which plants will really grow and thrive and, as a consequence, a large proportion of the more expensive suburban residences are being provided with a so-called conservatory.

Overcoming the Architect's Prejudices

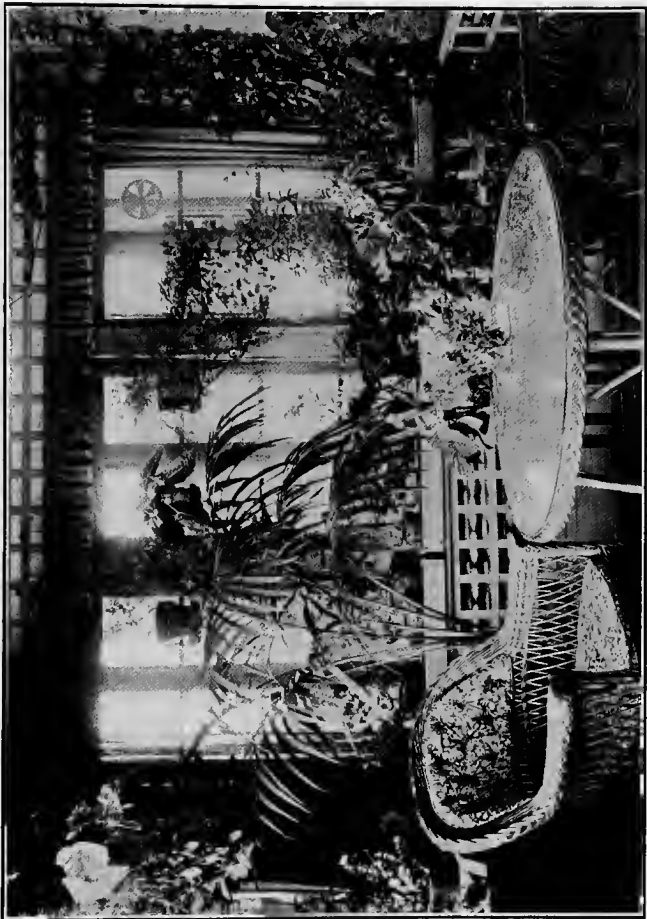
It seems at first sight a simple proposition that anyone desirous of building into, or onto, his house a small, practical plant room, could easily do so. All

the elements are readily available; the willingness to pay, easy access to the fundamental requirements in design and necessary materials, yet to obtain the sympathetic co-operation of an intelligent architect seems almost an impossibility. One would almost think, judging from the stubbornness of architects in this respect, that there is a natural antagonism between their art and that of horticulture; or is it failure on their part to recognize the growing importance of the latter in the domestic life of the nation? Whatever the cause, the results are sadly apparent from the plant lover's point of view, for in an extended tour by the writer, searching for a good subject to photograph, although plant rooms of one kind or another were common in the newer residential districts, not one was deemed worthy to offer as an illustration of a practical home conservatory.

Here seems to be an opportunity for an enterprising magazine or horticultural society to offer a prize for a set of designs that would embody the necessary requirements and as well harmonize with the building itself. No feature catering to the welfare of the plants need be unsightly or detract from the enjoyment of such a place as a tea room or lounge, and the fact that this conservatory or sun parlor was a success from every point of view would be a source of constant pleasure.

Necessary Provisions for Successful Use

In planning a plant room or small home conservatory, the following necessary features must be embodied in the structure: Provision for plenty of daylight, facilities for watering, airing, heating and con-

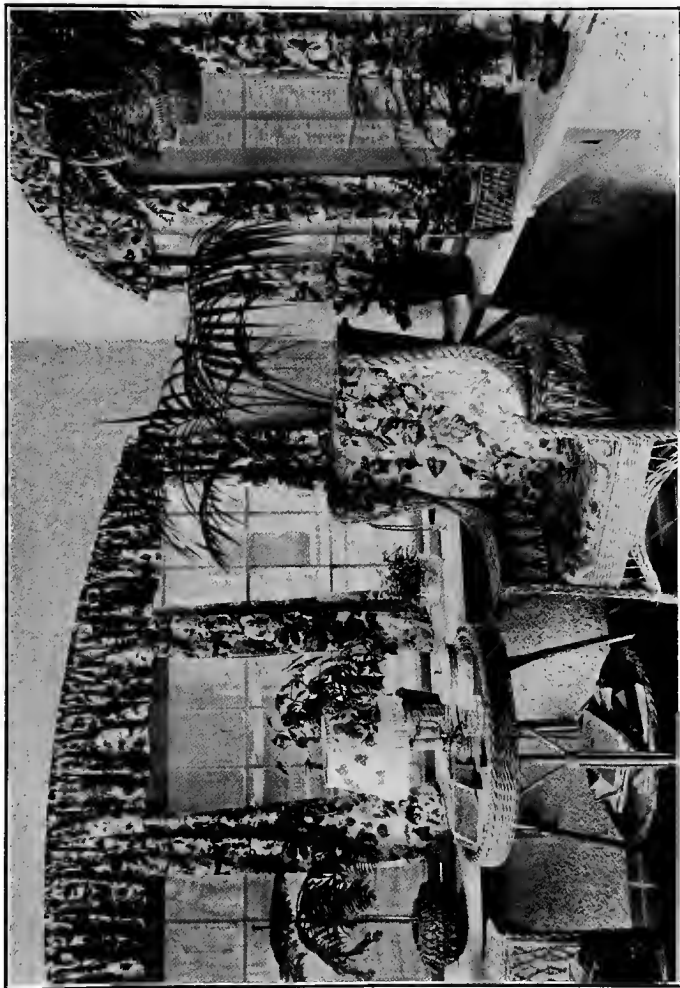


The Evolution of the Home Conservatory, at present in the Sun Parlor Stage
This very pleasant room is on the northeast corner of a house, has glass on two sides and opens into other rooms on the other two sides. It is typical of the hundreds of rooms that are being built in nice, modern residences, and represents the average architect's idea of a home conservatory. In time, as the desire for a real conservatory becomes paramount, there will doubtless be evolved rooms where plants will be given first consideration

trolling the temperature, which includes protection from cold draughts in the Winter and from excessive sunheat in early Fall and Spring; easy access to out of doors so that plants, etc., may be handled without disturbing the rest of the house; also for the complete shutting off from the rest of the house when necessary for purposes of fumigation.

Whatever the size or shape of the structure, it should be on the south, east or west side of the house, and should project from the house so as to have three of its sides exposed to the light and air. If the room is of one story only, additional light from the roof should be provided; it would not be necessary to have the whole roof of glass; if even one-third of the area were devoted to this, the effectiveness of the room as a conservatory would be increased fifty per cent. No amount of side light can make up for the absence of light from overhead and the two together certainly make the conditions as near ideal as possible. Then plants will grow and thrive in any part of the room and handsome hanging pots can be maintained in all their beautiful effects. If, however, only the side and ends, or sides and end, of the room are available, then it should be of liberal height, with the glass carried right up to the ceiling so as to get as much light as possible from overhead. If the room is of some size, this arrangement gives a large area of glass on its three sides and, being quite high, would, as far as light is concerned, make a practical plant room.

Outside of the question of daylight all the other necessary requirements are well within our control and, if they are not provided, it will be from a lack of knowledge on the part of the architect, or from indifference.



Another pretty conservatory or Sun Parlor, where plants are of remote consideration

Heating System Must be Perfect

The question of providing heat is one of the first to be considered and, technically, one of the most difficult. If the conservatory is to be an addition to an existing house it is often quite an expensive operation to bring pipes from the heater into an additional room through the main foundations. Of course, the perfect way would be to extend the main cellar under the new structure, in this way furnishing a permanent foundation, warmth under the floor and facilities for introducing pipes for heating, draining and watering. In nearly all of the conservatories visited, very little thought had been given to placing the heating pipes with regard to the plants and none whatever to graduating the degree of heat. The theory evidently has been that when the main dwelling needed heat, the conservatory would need it to the same degree and vice versa; so all that was necessary was to install enough radiators to keep the place at 75° in coldest weather and trust to the janitor to do the rest. Seldom had advantage been taken of the many devices used by horticultural builders to provide for distribution and control of heat or ventilation. In fact, very little evidence was apparent of a knowledge of the requirements of the plants or a desire to provide for them and, consequently, the very purpose of the building was frustrated and more or less of failure and disappointment resulted.

A coil of ordinary steam pipes carried around the three sides of the room and kept close to the walls is much preferable to any system of radiators. This is true with either steam or hot water. The pipes take up much less room, they distribute the heat more



The sun parlor can be made much more homelike and attractive by the addition of flowering and foliage plants
Courtesy Lord & Burnham Co., New York

evenly and they can be readily divided into pairs so that the heat may be regulated. These are all important features. Small pipes are better than large ones for the same reasons. Three pairs of one-inch pipe should furnish abundant heat, with hot water, for a large room and, if steam is used, three pipes would suffice. In either case, valves should be so arranged that either one-third, two-thirds, or the whole, could be used at will. This is a simple matter that any pipe fitter would understand. It is not necessary to make a burden of the opening and closing of valves. With a little experience the number of pipes necessary to keep the temperature right will soon be determined and then only extreme changes of temperature out of doors will require the addition or subtraction of another pipe.

If the plant room is small, it should be open to the adjoining living room by very large doorways so that the heat and air may be more equable, except that if it is thought necessary to keep the living room extremely warm, say 75° late into the night, then the little conservatory should be shut off and allowed to drop to its proper temperature of 55° to 60° . On the other hand, when the morning sun raises the temperature in the conservatory unduly, the doors should be thrown open and remain open all day. A rule to be remembered is that the plants need a low temperature at night and, under the same rule, during dark or dull days a relative low temperature should obtain, 55° to 60° at night, 65° in the day time. In bright, warm weather, 75° to 80° in the daytime would be all right.

Any growth that is stimulated by heat without a corresponding amount of daylight is always weak and

undesirable. Better to let a plant stand still and rest during a few dull days than to force it to grow under unfavorable conditions.



SMALL ATTACHED CONSERVATORY

Furnishing an excellent place for quite a variety of plants

Courtesy Hitchings & Co., New York

How to Construct an Ideal Sun Parlor

Let us study diagram, page 163: The structure should consist of the walls (A), some 2 ft. high, upon which the plate (B) is laid and, above this, the posts (C) that support the roof and furnish frames for the windows. The main windows (D) should be carried up 5 ft. or 6 ft. to the second plate or transom rail (E) which forms the top frame of the window. Above this should be the second line of transom windows (F) 1½ ft. to 2 ft. tall, by which all the ventilation should be secured. These should be ample in area and placed on all three sides so that air can be given at any time regardless of the direction of the wind. The main windows will, in this way, be framed in convenient sized panels and should be "double-glazed" before the cold weather sets in. This consists in fitting Winter storm windows around the entire structure; this furnishes a perfect insulation of "dead air" as protection from the outside cold. This, to many, seems an unnecessary provision and expense, but is really the most economical and effective feature of the construction. Here are some of its virtues: It makes an absolutely frost-proof double wall of glass and saves its first cost in economy of fuel in an incredibly short time; it allows the plants to grow close up to the glass, even to touching it without chilling them, and the glass is always clear, never being covered by frost even in coldest weather.

Storm Windows for Cold Weather

These "Winter windows" are placed inside and should be made so that all the bars come opposite

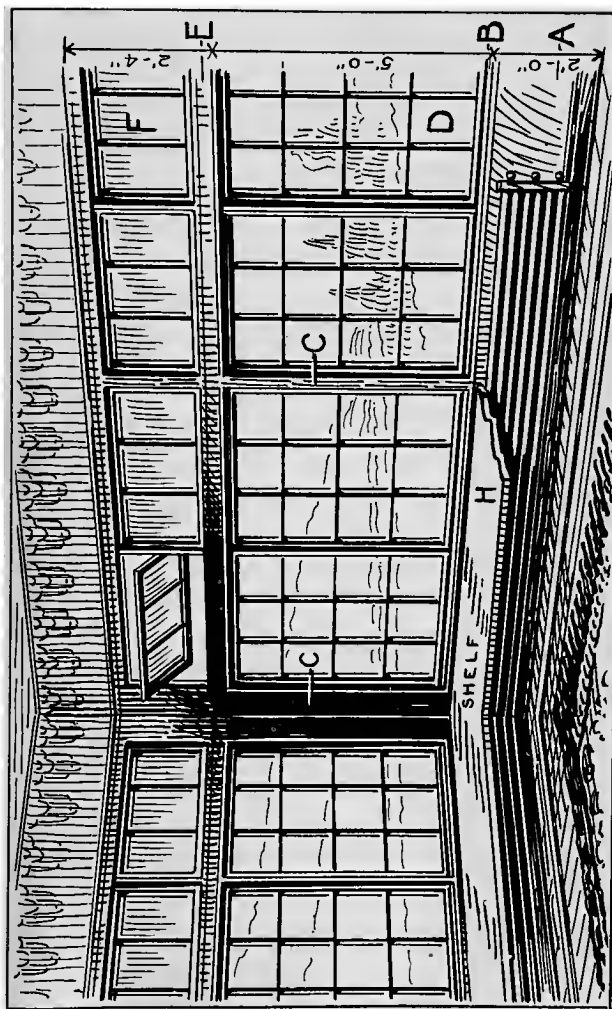


DIAGRAM OF INTERIOR OF A SUN PARLOR OR CONSERVATORY

The author, as a result of years of experience, here presents the perfect Sun Parlor. Why not have one of your own?
 (Construction is described from page 162 on)

those of the permanent windows; thus, in making the posts (C) and the transom rail (E) the surfaces should be left quite plain and free from fixtures of any kind so that the second window will slip easily into place snug up to the permanent ones. This will give an inch or so of air space between the inner and outer glass which is quite sufficient. The small upper transom windows need not be double glazed as they are small in area and far removed from plants.

Ventilating the Sun Parlor

Proper ventilation is the next in importance. If the room is small, in the nature of an exaggerated bay window, very little ventilation is necessary in the Winter time outside of that which is obtained by the open communication with the adjoining room of the house. In any case, ventilation from out of doors should be secured by means of transoms (F) set in the upper part as shown in the diagram. These should hinge on the center so that when open, the lower part of the window is out and the upper side in (see diagram). By this arrangement, the cold air rushing in is deflected upwards by the inclined surface of the window and is slowly diffused through the room and warmed before it reaches the plants below. This is an important consideration. At least half of the upper row of windows should be fitted for ventilation purposes and if all were available, so much the better as they could then be used to advantage in the warm days of Spring and early Fall. There are plenty of simple devices obtainable for opening and closing these out of the way windows so that they need not be inconvenient.



Conservatory and tea room with an excellent collection of flowering and foliage plants on a bench

Courtesy Lord & Burnham Co., New York

Sloping the Floor

The floor should be of concrete or tiles sloping toward a drain, preferably in the center. On this one point much of pleasure and success depends and yet here is where the architect is apt to take his final stand. After yielding on his stereotyped plans for lighting, heating and ventilating, he stands firm on the hardwood floor. Every facility should be given for the free use of water in the conservatory when desired. In fact, it is practically impossible to care for plants without splashing water around on occasions, and to be under constant restraint for fear of injuring the floor is certainly an unwarranted detraction from the pleasure of flower growing. A faucet should be provided and a piece of half-inch hose attached long enough to reach every corner of the house, also a common nozzle for spraying as described and pictured in a previous chapter. For everyday watering, the most practical and convenient thing is the kind of watering pot used by gardeners everywhere. This should have a moderately long spout of liberal size as distinguished from the parlor toy usually found in the house.

Arrangement of the Plants

The smaller plants should be arranged around the three sides of the room on a bench or shelf (H), as shown in the diagram. This should be built at a height from the floor so that ordinary 6-inch pots will not show from the outside, and should be kept about 2 inches away from the wall to allow some of the warmth from the pipes to pass directly upward.



What more Delightful than this cosy Plant Window ?
Demonstrating the value of Ivy as a window plant in the home (See page 57)

Twelve to eighteen inches, according to the size of the room, is a convenient width, and the entire shelf should be covered with galvanized iron turned up at the sides $2\frac{1}{2}$ inches so as to form a trough. This can be made in sections three to five feet long, for convenience in handling, and painted outside either green or the color of the interior finish. Two inches in depth of the white pebbles, to which reference has been made, spread evenly over this shelf, will form an absolutely ideal surface on which to stand the plants. It will receive all the water that runs through the plants, after watering them, and if this is not sufficient to maintain a level of water almost to the surface of the pebbles, enough more should be added from the hose to do so. In this way, a constant evaporation is going on, giving health to the plants and furnishing a delightful, moistened atmosphere for the whole room.

Large palms and other plants may be set about the floor to furnish the rest of the room while hanging pots are suspended from the ceiling. Brackets can be screwed to the window frames and English Ivy in large pots can be trained in any available space. Birds and aquariums may be introduced and the conservatory, if large enough to seat several people, will be the most attractive room in the house.

Sun Protection

Roller shades should be fitted to all the lower windows and these should be white or of light color. They will form a welcome shade during the hot sunny days of Spring, Summer, and early Fall, and also secure privacy for the room in the evening. Draperies

are an anomaly in a conservatory and cannot be introduced with good taste, except the room is primarily a parlor or breakfast room and the plants of minor consideration.

Cautionary

It may be well in closing to warn against the common error of cluttering up the room with half-dead and unsightly plants. This condition is quickly brought about by unduly crowding the healthy plants in the first place and can only be remedied by a courageous thinning out process from time to time as the stock accumulates.

If aphid or kindred insects make their appearance, fumigation with tobacco should be applied immediately; in fact, most florists fumigate their greenhouses once a week without waiting for the appearance of these pests. Paper saturated with nicotine is put up in convenient form for this purpose and may be obtained of any seed store and of most florists. The process is simple and very interesting and is entirely harmless to anything except the insects. Instructions as to using this can be obtained at time of purchase.



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