



HOME

HOUSE PLANTS

THEIR CARE AND CULTURE

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WITH 125 ILLUSTRATIONS

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TO
MY MOTHER

WHOSE GENTLE SPIRIT TAUGHT ME TO DREAM

AND TO
MY FATHER

WHOSE ROUGH HANDS AND RUGGED HEART
TAUGHT ME TO WORK



PREFACE

WHILE it is impossible to describe the many and varied conditions in which plants eke out an existence during the severe winter nights in our window gardens, yet it is hoped that the general consideration of such conditions have been touched upon and helpful suggestions made in this book.

Careful directions have been given as to the best possible place for a window garden, soil preparation, and general treatment of the cultural methods of growing common house plants, with minute directions as to the control of diseases and insects. With each plant described is a brief sketch of its history, as well as a careful description of propagation.

It is hoped that this book will aid in better and surer results in attaining the pleasure and other benefits in raising plants in the window or conservatory.

I am indebted to the following gentlemen for photographs: Frederick H. Southworth; E. J. Kuhne; Lord and Burnham Co., Rochester, N. Y.; College of Photography, Syracuse University; and to the Curtis Publishing Co. for allowing me to reprint the articles on Insects, The Rubber Plant, and Care of

PREFACE

Porch Boxes, published in *The Country Gentleman*.

I am especially under obligations to my friend, Hon. John T. Roberts, for his careful and expert criticism of the book, and also to Peter Henderson for the information regarding the plant history as given in "Henderson's Handbook of Plants."

I also wish to acknowledge the kindness of my friends who allowed me to photograph their choice plants, and to Frances and Mary Allen for the frontispiece.

HUGH FINDLAY.

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HOUSE PLANTS

HOUSE PLANTS, THEIR CARE AND CULTURE

CHAPTER I

THE HOME BEAUTIFUL

THE chief end of labor should be human happiness, and so the effort that is put forth in the cultural art of taking care of house plants not only brings happiness to the heart of the grower, but also to the passer-by who with a hungry soul admires this plant or that in the window and remembers.

Often after the chaotic condition of our minds, the battle of the day having been lost or won, we seat ourselves near the big window and look at our plants. What a peace comes over our hearts as our plant friends scatter flower memories over the barrenness of our

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souls. The corner stone of evolution itself is the home, and there is no occupation that will make this corner stone more beautiful than the culture of house plants.

The suggestions put forth in this book are from personal experience and observation. I have followed this chosen profession from boyhood and I owe much to my father's guidance as an expert gardener and florist and to my mother's tender heart in encouraging me in the love and study of plant life. So I have watched the evolution of the Home Beautiful and have taken part in the delightful occupation of caring for the window garden.

There are a number of books on house plants, and it is hoped that the detailed description of the care and culture of the various plants common to the home, as found in this book, will encourage the culture of more house plants and better house plants, and finally to create a greater love for the home, the community, and our beautiful country of homes and flowers.

CHAPTER II

PLANT WINDOWS AND CONSERVATORIES

WHETHER or not to keep house plants is a question that comes to every housekeeper once a year. Failure on previous occasions may decide for the negative, but with a large number of plucky and sanguine women it works the other way. Having failed once is a reason for renewed effort and improved method.

It may be found that the presence of the plants has been embarrassing in many of the homes. They have shaded windows that were needed for lighting the rooms. They have interfered with ventilation. They have caused no end of anxiety on cold nights. Yes, this may all be painfully true. Still why not keep them a little longer? Keep them for patience' sake and for the children. But cannot something be done to improve conditions? Those

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windows—why not make a study of these things in the summertime and arrange special



Courtesy of Lord and Burnham Co.

FIG. 1.—A BEAUTIFUL CONSERVATORY

plant alcoves in addition to the regular lighting windows? Much may be done even in the

WINDOWS AND CONSERVATORIES

old houses to make the plants feel at home. But when a new home is being planned then certainly a little ingenuity without additional expense can provide a charming solution of the plant question. Why do not house architects take up this matter and help the perplexed housekeeper? Bearing in mind that certain plants need a south or east exposure, while others, like ferns, should always be shaded, let the architect specify two bay windows, each in some manner provided with heat and if possible separated from the rooms by glass doors. All of this will cost some additional money; so will the bathroom, the piano, the fireplace. We provide many things in our homes that could be dispensed with. Why not think of the winter lodgings of the children and those who used to be children?

One convenient plan we would suggest is a long bay window entered from two adjoining rooms, kitchen and dining-room, a glass door for each room. It should be at least five feet wide and if you are brave enough, insist on a

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glass roof. In such a room, which is really a conservatory, there are most beautiful possibilities.

And why do not our schools have their plant rooms or conservatories or even complete greenhouses? Many cities are spending yearly from \$700,000 to \$1,000,000 in constructing new school buildings in which they provide rest rooms, swimming-pools, kitchens, dance halls, sewing-rooms, workshops. Not one of these contains a suggestion of a plant room. What a beautiful feature of school life would be a twelve by sixteen greenhouse, costing one hundred and twenty dollars to build and no additional cost for heating! Why not let the church consider the construction of a plant room adjoining the auditorium or the Sunday-school room? Let it be twenty by sixteen feet at least. Make it large enough for the mid-week prayer meeting of winter nights. Suppose a few carnations or roses or a handful of heliotrope could go out from such a room to the home of a sick member or for a



Courtesy of Lord and Burnham Co.

FIG. 2.—INTERIOR OF A WELL FILLED CONSERVATORY
Note the grace and beauty of hanging baskets.

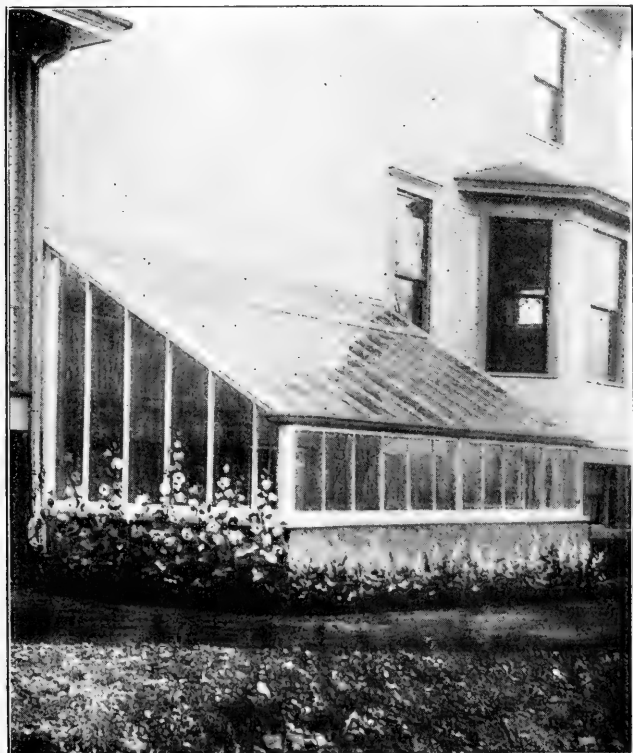
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birthday reminder or to enforce a thought struggling for mastery. Would they not be suitable helps to the sermon? Call them home missionaries.

And why should there not be a few municipal greenhouses where people unable to grow and watch plants in their own homes might get an occasional half-hour's joy of the summertime when winter is pressing down the spirit of man? Probably there are in every city hundreds of persons, infirm, poor, cramped for house room, to whom a welcome at a greenhouse would be most enjoyable. It need not be large nor expensive. Common varieties of flowers could be grown, the more familiar the better. Cities are looking after the enjoyment of the youngsters more and more. They must have their playgrounds, their skating areas, their swimming-pools. Why should not their grandparents, banished forever from luxury, from rural delights, from participation in the pursuits of agriculture, have an occasional breath of garden air in the dreary winter days?

WINDOWS AND CONSERVATORIES

Think what the great parks of European cities would be without their popular gardens and greenhouses. Our finest remembrances of



Courtesy of Lord and Burnham Co.

FIG. 3.—LEAN-TO GREENHOUSE HEATED FROM THE CELLAR

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London and Paris have to do with the gardens maintained by the municipalities. And how the people do love them! Yet no coöperative plan worked out in the lines suggested can properly take the place of the dear little plant corner in every home.

The plant window is subject to fluctuations of temperature on account of the artificial means by which it is heated, while the moisture and lighting may to a limited extent be governed. On extremely cold nights, close the windows tightly, pull down the shades and if necessary place a large lamp or oilstove in the window. Where a radiator is used a pan of water should always be placed on it so as to keep the air moist during the day, but this should be removed not later than three p. m. during the winter months so that the moisture is eliminated during the cold night. The temperature is best controlled by having a small individual stove with pipes leading to the window greenhouse so that it supplies heat directly to it. This method of heating always

WINDOWS AND CONSERVATORIES

pays since the stove costs about twenty dollars and the piping about ten dollars, while the cost of coal is small compared with the results rea-



Courtesy of Lord and Burnham Co.

FIG. 4.—INTERIOR OF LEAN-TO GREENHOUSE WITH VEGETABLES AND FLOWERS COMBINED

Note plants under the bench. Every possible place utilized.

lized in the production of perfect plants and beautiful bloom.

The lean-to greenhouse is one of the most satisfactory of all simple and inexpensive con-

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structions. It is certain that the reason more people do not have small greenhouses is because they have only a vague idea of their possibilities. A small greenhouse such as shown in Fig. 3 costs about two hundred and fifty dollars to six hundred dollars and the pleasure of tending garden in one of these thoroughly built, splendidly equipped houses is beyond estimation. I have seen in a small greenhouse, heated by a small heater in the cellar, lettuce, radishes and other vegetables and also many beautiful flowers grown at the same time.

If a piazza or bay-window conservatory, or one constructed over a cellar door, or a lean-to greenhouse is to be built, it is the general opinion that a reliable greenhouse firm should be consulted and if the directions advised are carried out regarding construction and heating, success is sure to follow.

CHAPTER III

THE SOIL FOR POT PLANTS

God breathed the breath of life into the soil and it smiled back at its Creator in the form of a flower.—H. F.

THE plants in field or wood, in garden or home depend not alone on oxygen, hydrogen and nitrogen from the atmosphere, but also on a combination of elements found in the soil. It must be remembered from the beginning that the plants taken into the home are often handicapped by the various gases in the room or conservatory and also by the limited amount of soil in the pot or bench, and often by lack of the right type of soil for the particular plant.

The proper soil treated with sufficient air and water and with ordinary fertility will develop satisfactory plants, but why not make a

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study of the natural haunts of your plants, as far as possible, and the kind of soil in which they thrive best, and then apply your knowledge and be satisfied with only the best results?

There are many combinations of soil, but for general purposes the compost soil is the best. Do not start to build the heap in a low-lying place, but give it good drainage. Invert six inches of sod over the surface, then throw on six inches of loose garden loam, add six to eight inches of cow manure on top of this and then another layer of soil and manure. Remove the stones. After a heap of the desired size, not over four feet high, is built, cover with inverted sod six inches deep on sides and top. Allow this to stand for three months or more (winter), then chop the sods into small pieces, mix and turn the entire heap. This should be done at least three times before the soil is used, thus distributing all of the fertilizers evenly. It is also advisable to scatter bone meal over the soil, but never dump garbage or pour dish-water over the heap as is occasionally advised.

THE SOIL FOR POT PLANTS

Another compost is made by using a foot of leaves on the bottom, six inches of soil and sod

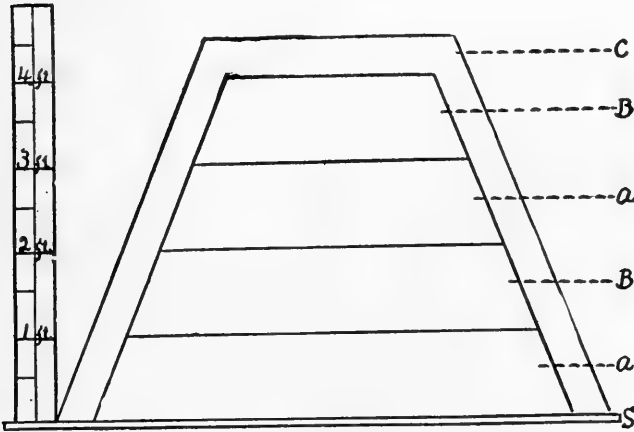


FIG. 5.—DIAGRAM SHOWING THE CONSTRUCTION OF A COMPOST HEAP S, surface of soil; A, soil and sod; B, manure; C, sod, grass side down

and six inches of horse manure, straw having been used for bedding the horses. Add considerable bone meal ground fine. If the horse manure should be a little dry, give it a good watering.

A good compost for ferns is made by using one foot of leaves, one foot of dark rich garden loam and sod, a little sheep manure scattered

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over the soil and then repeated in layers until the heap is three or four feet in height. Turn

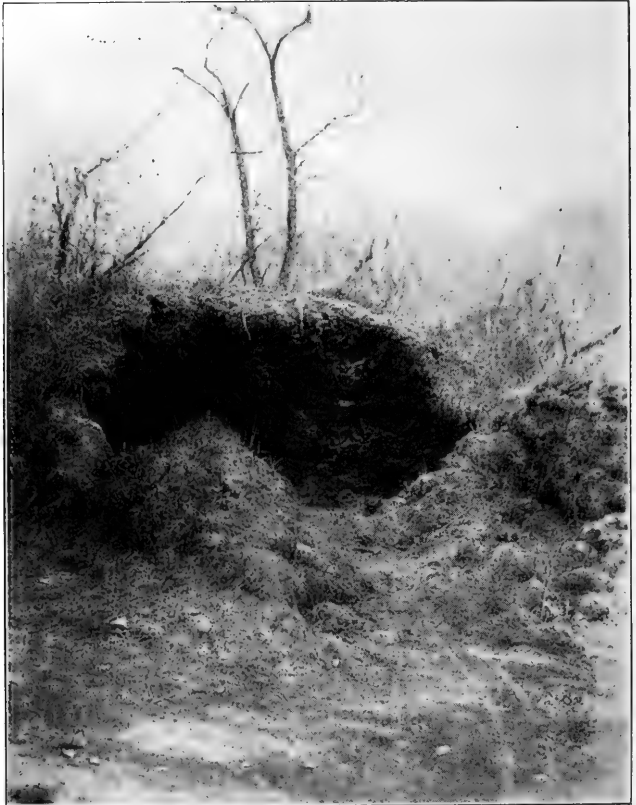


FIG. 6.—A COMPOST HEAP OF SOD, GARDEN LOAM, AND HORSE MANURE

THE SOIL FOR POT PLANTS

over a number of times after three or four months, leaving the compost loose and friable.

There is a general opinion that the black woods dirt is very rich. This is a mistake, and forest soil should never be used alone for any cultivated plant. Nevertheless the muck-land soil is fine to add to the fern compost heap, but see to it that vermin are destroyed by sterilizing. Many housewives put the soil in the oven. Be careful not to cook and kill your soil by leaving it in the heat too long—never more than twenty or thirty minutes. The soil is alive just as much as the plant, and there are millions of small organisms that live only a short period, die and become plant food as they decay in the soil. Too much heat will destroy all of this life which is of the greatest importance to growth.

The clay type of soil is suited only to a few plants, like the rose, but stiff clay should never be used. It is not a mistake to add the sod from the clay soil and also a little horse manure to the clay compost, especially for the

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rose. Bone meal should be added in liberal quantities to the clay soil because the plant food is not liberated all at once but gradually. Clay in itself is often rich, but the plant food is locked up and any fermentation will aid in liberating it.

Sand is the most desirable type for the propagation of plants. Clean white sand is preferable, but road sand is good. There is little vegetable matter in it. Any decay in the soil coming in contact with the wounded portion of the cutting will in turn cause the cutting to decay. Fungus growths of various kinds are retarded in clean sand because of the lack of plant food, and the looseness of the sand will admit the air.

Certain types of soils become sour by the use of too much water or from pots standing in vessels partly filled with water. The tips of the roots begin to decay and turn brown. The same condition is found on roots where the pots containing resting plants during the summer are left standing in damp, shady places.

THE SOIL FOR POT PLANTS

Whenever leaf mold is used in the compost it is not a bad plan to scatter a little lime over the soil, but never over the manure or leaves, for this will tend to preserve them and prevent decay.

There is a great deal of discussion as to the kind of manure to use. Cow manure is the most desirable of all, because it mixes so evenly in the soil and there are fewer worms in it than in horse manure. It also has an evenly balanced food value for the plants. Horse manure is also valuable, providing the horse is fed grain (oats) and bedded in straw. The manure from horses fed solely on hay and bedded in pine shavings is never desirable, because the manure is poor in food value and the pine shavings tend to sour the soil as well as to keep it too loose. The shavings are slow to decay and have little or no food value, and since there is a limited space in the pot for soil every available advantage should be taken to favor the plant.

Chicken manure is very highly concentrated

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and often burns the roots of plants where it is used too freely. I have successfully potted ferns in three parts soil and sod, one part leaf mold, a little chicken manure and lime scattered through the compost, but care must be taken in combining these. Never use hog manure. The odor is offensive in the house even when the parts are well mixed. Sheep manure is more concentrated than either horse or cow manure, and when pulverized and used in limited quantities it is most satisfactory.

It is not always possible to have the combinations of soils and manures suggested, but with our modern methods of travel even the city folk may get into the country and secure a pail or basket of rich garden loam. Do not shake out the sod or roots, for fiber, if not too rough, will soon decay and aid in the growth of the plants. The roots and sod not only decay and liberate food, but they help to hold the moisture in the soil, which is of great importance. Your success is in the soil you use as well as in the care you give your plants, so there

THE SOIL FOR POT PLANTS

cannot be too much attention given to the preparation of the soil. No one can advise you as to the combination to use in your part of the country without first having some experience with the soil, because soils vary so much, but after a year's observation you can easily select the best soil suited for the individual plant. This always adds interest to window gardening, for every plant lover is experimenting and hoping for the best results. When you can feel the heart throb of the soil you are in tune with nature and you will succeed in your attempt to grow house plants.

CHAPTER IV

POTS AND POTTING

THERE are two classes of plants to be considered when the pots are to be selected: flowering and foliage plants. The flowering plants in general do not require as large pots as do



FIG. 7.—SERIES OF PRACTICAL POTS

A series of shifts for a growing plant from a three- to a six-inch pot.

the foliage plants, for we find that the flowers are more abundant if the plant is a little pot-bound, while the foliage plants require more water and therefore more soil. The kind of

POTS AND POTTING

plants grown often governs our selection of pots. Tulips and hyacinths do well in earthen bulb pans, varying from six inches to eighteen inches, while geraniums do better in earthen flower pots, which are much deeper, while the very large plants require tubs. The shallowest of all are the earthen fern pans and they vary in size according to the use they are put to. These pots range in size as seen in Fig. 7.

Before potting with new pots it is advisable to submerge them in water for at least an hour, so that they may be saturated with water, and this will prevent the pot from drawing the moisture from the soil. The new pots should be drained for a few minutes before using, otherwise it will be difficult to remove the soil in a ball when desired, the soil adhering to the side of the pot.

Of all the operations in the work of potting, the providing of drainage is the most important. Invert a piece of crock over the hole on the bottom of the pot and then put in one-half inch of rough soil in the bottom. This will in-

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sure drainage. Pots over four inches should always be treated in this way. In some cases (fern) lumps of charcoal placed at the bottom of the pot will aid drainage and also admit the air to the soil and in this way keep it sweet.



FIG. 8.—POTS AND SAUCERS

A, stationary saucer, seldom emptied and often a detriment to growth; B, portable saucer and pot. The saucer may be emptied after each watering.

If the crock is not used in large pots the soil is often washed out by the water and the continual displacement of soil from the roots injures the plant, and also keeps the bench or sill dirty. Where the amateur feels that plants must be watered every day, which is not

POTS AND POTTING

always necessary, proper drainage is of the greatest importance to prevent an oversupply of water which shuts out the air and in turn sickens the plant.

Where the plants are standing on benches



FIG. 9.—FANCY POTS

Fancy pots difficult to keep clean but attractive.

have an inch of ashes on the bottom and over these scatter a little lime. This will aid drainage as well as prevent slugs.

Plates, saucers and vessels of any kind into which the pots are set are dangerous if the water is not removed. The stagnant water will soon sour the soil and kill the roots.

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Never use tin cans. While I have seen some fine plants grown in tin cans, yet they might have been finer had they been grown in pots. The cans rust and kill the tips of the tender roots. While iron is necessary to a limited amount in the soil, yet too much is very dangerous to growth. Glazed pots are objectionable and wood fiber pots do not last long. The hand- or machine-made earthen pots are by far the best.

Do not give the young plants too much food. A small pot should be used at the beginning, to be followed by a gradual increase in size according to the habit of growth and the type of plant treated.

Hold the seedling between the first finger and thumb of the left hand, covering the heart of the young plant with the seed leaves.

With the right hand partly fill the pot with soil, place the seedling at the proper depth, being careful never to cover the growing tip, then fit the soil about the plant. Place the thumbs of each hand on both sides of the plant

POTS AND POTTING

and firm the soil about it (Fig. 12), then lift the pot with both hands and strike the bottom squarely against the potting bench in order to firm the soil. Larger plants are firmed by tamping the soil with a flat stick. Always be

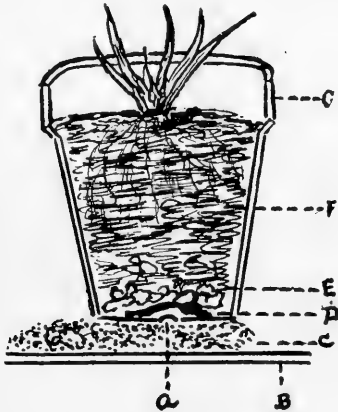


FIG. 10.—DIAGRAM OF A POT CONTAINING PLANT

A, Drainage hole at bottom of pot; B, bench; C, ashes; D, broken crock, inverted to promote drainage; E, rough soil, sod and small stones; F, soil; G, rim of pot.

sure to give the roots freedom in position, but never allow an air space below the roots, for this means sure death to the plant.

After the plant has reached a certain growth it is well to examine the roots by placing the

HOUSE PLANTS

left hand over the surface of the soil, the stem of the plant between the second and third fingers. Invert and strike the rim of the pot on the edge of some solid object, remove the pot



FIG. 11.—POTTING A PLANT

Position of plant in pot. Fill in the soil around the roots.

carefully, so as not to disturb the roots. After the roots have been examined, cover the ball of soil while it is in the same position in the hand; when all the ball of soil is in the pot, turn it right side up and firm the soil by striking the

POTS AND POTTING

bottom of the pot against the potting bench. When the operation of potting is completed the soil should be three-fourths to an inch below the top of the rim (Fig. 13), so that the



FIG. 12.—POTTING A PLANT
Position of thumbs in pressing soil about the roots.

water may be evenly distributed over the surface. If the pot is too full of soil the water runs off and the plant receives no benefit.

In repotting old plants or plants that have been resting during the summer, shake off the

HOUSE PLANTS

old soil, prune off all disfigured or decayed roots and a few of the good roots, then prune the top so that there is a balance between the requirements of the foliage and the supply



FIG. 13.—POTTED PLANT COMPLETE

Note the rim of the pot and the heart of the plant. Room for water.

through the root system. Always be sure to have the soil firm about the plant. Newly potted plants, seedlings, cuttings or old plants should be kept in the shade for a few days so that they may get established before coming to the light.

POTS AND POTTING

The soil becomes tired of water, gases and general conditions in the pot and it is to the advantage of the grower to take time and interest to repot at least once a year. Where the soil is rich, the pot large enough, and fertilizers used at various times, one potting a year is enough and with the large tub plants once in six or eight years. There are now on the market Krick's pot hangers, also the Eureka hangers. In this case the pot is used as a hanging basket, the air from the bottom, sides and top dries it out more quickly than a pot on a bench; therefore the plant requires more water.

Care should be taken to have plants, especially seedlings, placed in the center of the pot. I have never seen anyone careless in this small detail who was truly successful with plants.

CHAPTER V

WATERING

WE have no set rule or time for watering plants, but all plants should be watered when necessary. This is determined by the grower, for on dull days the plants need less water than on bright days. It is not a good practice to allow the plant to flag or wilt before water is applied. The best practice for the general culture is to rap the pots, and should there be a hollow sound, the soil below the surface is dry and if a dull, dead sound the soil is moist even though the surface may look dry.

Some overzealous persons usually water the plant every day and sometimes twice a day. If this practice is followed, the plants become sickly before long, the leaves turn yellow and the growth becomes spindling. Few flowers, if any, are developed on such plants. Judg-

WATERING

ment must be exercised from the watering of the seed bed until the harvest of the bloom.

In watering the seed flat after the seed is sown, it is advisable to use a fine rose or sprinkler, so that the seed is not washed out of position. The soil should be moist, not wet, from the surface to the bottom of the box. Covering these boxes with glass and then paper will prevent evaporation and this in turn will mean less watering. Too much water lessens the vitality of the seed and impairs the growth of the seedling. It also has a tendency to develop a green scum over the surface of the seed bed which is most dangerous, causing many of the young plants to decay. After the young plants are transferred to the first pot, which is small, little water is required, but the growing seedling should never suffer from drought. In supplying water to larger pots be careful not to wash out the soil, which is often done in the center of the pot and the roots around the stem of the plant are exposed. After the water has drained thoroughly into the soil it is

HOUSE PLANTS

a good practice to stir the surface with a fork or stick, but do not go deep or the roots near the surface will be injured.

The main aim in watering is to get the moisture to the roots and this must be done with



A B C

FIG. 14.—WATERING POTS

A, practical watering pot, especially for seed beds; B, rose to be placed on the spout of the watering pot so as to distribute the water like rain; C, fancy watering pot.

care. Water should not be allowed to stand in vessels in which the pot is placed, though fine seed sown in pots are often watered by plunging the pot in water and allowing the moisture to enter from below. This is a good

WATERING

practice with begonia or calceolaria seed. In the case of ferns and other plants standing in a jardiniere for several weeks the water becomes stagnant, the air about the pot foul and in general the plant will soon take on a yellow appearance, sicken and often die. In watering the plants with liquid cow manure the solution should be very weak, like weak tea. Water on days when the room may be ventilated, and shortly after applying the liquid to the soil stir the surface and there will be little or no odor such as might be expected. Never allow the manure water to come in contact with the foliage. The mixture should stand for a few days before applying and then be applied only in limited quantities.

In the summer plants are best watered in the evening. The open windows will allow the dews or moisture to enter and the water gradually works its way into the soil. Pots dry out quickly in the wind or a draft, especially when the air is hot and dry. Never wet the foliage in the summer when the sun is high.

HOUSE PLANTS

In winter it is best to water the plants in the morning and on bright days, if possible, so that the foliage may become dry before night.

This is not always possible where the rooms are kept warm and dry; in this case care should be exercised not to wet the foliage on dull days, for this carelessness might breed disease.

Hanging baskets suffer from lack of moisture more than any other decoration we have introduced among home-grown plants. The air circulating about the entire surface makes frequent watering necessary, especially where the basket is exposed to the sun. The most practical method is to plunge the entire basket in water for a half-hour and allow the water to work toward the center from all parts. Where the lowering of the basket is not practical the tin can method may be employed. Place in the center of the basket a narrow can perforated with holes, fill the can with water and let it seep into the soil. The surface may be watered successfully by applying the water slowly and allowing it to work into the soil.

WATERING

Window boxes often suffer from lack of proper moisture. Be sure the water reaches the roots as indicated by the water escaping drop by drop from the drainage holes in the bottom of the box. As soon as the drip begins stop watering.

Different plants require various applications of water. The fuchsia or geranium can stand a greater amount of moisture than palms, while the cactus, being a native of hot dry climates, requires but little watering.

After a time the amateur florist feels the needs of the plants on looking at them; they become so much a part of his life that the plants appeal to his senses, and after several years of practice and close observation various plants exposed to different amounts of light will receive the proper attention, because the heart answers to the plants' needs.

CHAPTER VI

NATURAL AND CHEMICAL FERTILIZERS

STABLE manures are the most desirable for they not only add fertilizer or plant food to the soil but they generally change its physical condition. If stable manures are kept moist, protected from the open air and never allowed to burn, which causes horse manure to turn a slate color, they will always be a benefit to the soil. See chapter on Soils, page 19.

Never plant a seedling or cutting in a large pot filled with richly manured soil, for it will act on the plant as beefsteak would if given to a tiny baby at every meal. The child will soon grow sick; so does the plant.

After plants are well established there is no fertilizer more desirable than liquid cow manure. Plunge a half-barrel in some out-of-the-way place and put in soft cow manure; add

FERTILIZERS

water and allow it to stand for two days. Cover the barrel in order to keep out insects which might breed in it. Dilute the liquid so that it looks like very weak tea and apply at intervals as advised. After the liquid has settled and the soil is not very wet, stir with a small flat stick. This liquid manure is also fine for sweet peas and garden vegetables like tomatoes after the small fruits are formed.

Manure gathered from a cow pasture after several weeks' exposure to the elements and chopped up fine makes a most satisfactory top dressing for pot plants. Commercial fertilizers should be the last resort in the culture of pot plants, with the one exception, bone meal, which is a most reliable fertilizer when immediate results are not required. If mixed with soil or manure the plant food is slowly liberated, so that good results are realized during the entire season.

There are several grades of bone fertilizer: A, coarse cracked; B, coarse ground; C, bone meal finely ground, sometimes called bone dust.

HOUSE PLANTS

This last grade is most satisfactory when applied to the surface of the soil and worked in, while the coarse ground is best for compost heaps.

Tankage is sometimes applied to rose soil and is found satisfactory.

If your plants grow sickly and yellow, other things being right, it is a notice from the plant that more food is needed. A little pinch of nitrate of soda in a cup of water applied to each pot will bring the plants back to health; and it is well at this time to work in a little bone dust. A large application of nitrate of soda will kill the plant, so apply sparingly, being careful not to wet the leaves.

There are many patent fertilizers or medicines for the soil, mostly made up of nitrate of soda, some of them very satisfactory.

Thompson's Chrysanthemum Manure and also Fertilene are desirable for chrysanthemum culture.

Mak Gro is an odorless plant food particularly adapted for house plants. A one-pound

FERTILIZERS

box is enough for application to fifty 4-inch pots.

Macbell's Plant Food is a highly concentrated chemical fertilizer for house plants.

Bowker's Plant Food is odorless and exquisitely fine for sturdy plants. Ammonia is sometimes used to feed palms and other plants. It is not a true plant food and should not be used. It simply stimulates the plant to greater activity, but gives it nothing to build on.

Feed your plants as you would the human family. Study their needs, listen with your eyes to their calls and as they grow older, more and coarser food may be given to them, as in the case of the chrysanthemum.

Never overfeed and never starve your plants; both are poor practices.

CHAPTER VII

SPRAYING OR SYRINGING

NATURE sprays or washes the faces and bodies of her children with the rain, removing any foreign matter from flower, foliage or stem, and how fresh the flowers look after a shower! Potted plants in the house are in an unnatural condition and we must act as agents to direct the elements as nearly as possible to Nature's way; therefore an occasional spraying or syringing is most desirable for house plants. Dust is an enemy to the plants. It clogs the pores of the leaves. Plants with a hairy or rough foliage, like the geranium or heliotrope, should be covered with newspapers, sheets, etc., while sweeping is being done, except where a carpet sweeper or a vacuum cleaner is used. In winter spray the plants with a parlor syringe, an elastic sprinkler. Use water with

SPRAYING OR SYRINGING

the chill taken off, apply in the morning and only on bright days.

Dipping a whisk broom into the water and sprinkling the plants is an awkward method and not at all satisfactory because the spray is not fine enough and it is not applied with sufficient force to dislodge insects or remove dust. Spray the under side of the leaves as well as the upper side. I have devised a bath tub and you can make one. Surround a large pan by a framework lined with oilcloth. Place the plant in the pan and spray. You make no spots on the glass or wall, and there is no danger of chilling the plant as when removing it to another room. After plants are returned to the window and one side is dry, turn the pot so that the moist side may be exposed to the sunshine.

Where it is possible without doing damage to the woodwork or paper, spray the plants, pots and sills on bright days. The moisture about the plants has a tendency to stimulate a luxuriant growth.

HOUSE PLANTS

Plants should never be placed out-of-doors during a cold rain in the fall. It is just as uncomfortable for the plant and just as peril-

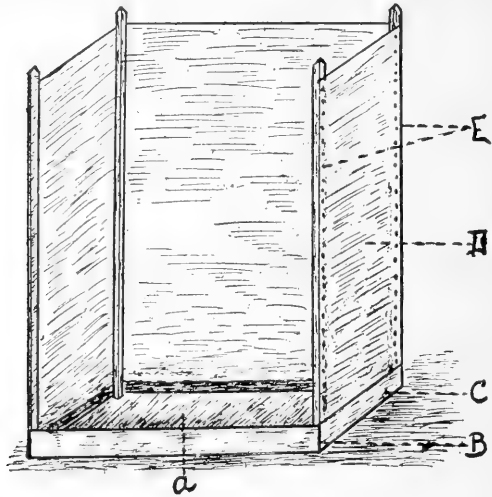


FIG. 15.—FLOWER BATH TUB

Diagram showing bath tub in which to spray house plants. A, open front; B, depth of pan, 4 inches; C, width of pan, 4 ft. square; D, oil cloth on three sides, $3\frac{1}{2}$ ft. high; E, portable frame 4 ft. high inside of pan. Oil cloth should reach the bottom of pan to prevent dripping of water on the floor.

ous, as it would be for yourself to stand in the shower unprotected.

For most plants the temperature of the room should be from 65° to 75° F. before the bath.

SPRAYING OR SYRINGING

The proper spraying or syringing of plants with clean water dislodges many insects, removes dust and stimulates a healthy growth.

Judgment must be used when to spray but it is a good practice to spray once a week during the winter if the weather will permit and every day during the late spring and summer.

The leaves are the lungs of the plant and if these are clogged with dust, the plant catches cold, sickens and dies. A bath to a plant is as necessary to its health as a bath is to the health of a human being.

CHAPTER VIII

DISEASES AND THEIR CONTROL

IT is impossible in the limited space of this little book to go into detail regarding the habits of the organisms causing disease or into the study of the many diseases that attack plants, but we may simply refer to causes and possible control.

There are two types of fungi common to house plants: the fungus which develops and covers the surface of the foliage, like the downy mildew on the rose; and the fungus which causes the breaking down of the cells of the plant, finally promoting decay. Bacterial diseases are not so common to house plants.

The fungus is propagated by means of spores, which are not unlike the seed of flowering plants, and they need air, moisture and heat to germinate. The little white root-like

DISEASES AND THEIR CONTROL

parts (mycelium) penetrate the cells or cover the surface, causing the plant to suffer because the green coloring matter is destroyed and the food supply is shut off. The only method of



A

B

FIG. 16.—ROSE LEAVES ATTACKED BY DOWNY MILDEW
A, Diseased leaf; B, a perfect leaf.

control is to prevent these spores from germinating, and they should be checked before much damage is done. This check or control consists in covering the foliage with a liquid

HOUSE PLANTS

(Bordeaux mixture) which coats the foliage with a thin layer of copper and prevents the germinating spore from penetrating the cell. Another control consists in dusting the foliage

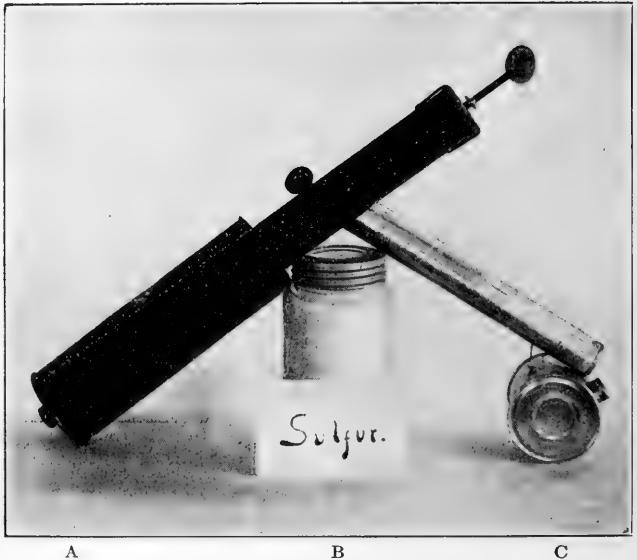


FIG. 17.—SULPHUR AND SPRAYERS
Apparatus and material for the control of rose mildew. A, dust sprayer, \$.50; B, flowers of sulphur; C, dust sprayer, \$.25.

with sulphur, which destroys the young fungi as soon as they start growth.

There are many causes for disease, and these

DISEASES AND THEIR CONTROL

should be removed as far as possible. The amateur is sometimes overzealous in feeding the plant. These "plant banquets" cause



FIG. 18.—MATERIAL AND EQUIPMENT FOR CONTROLLING INSECTS AND DISEASE

For chewing insects and fungus diseases, three tablespoonfuls to a pail of water.

loss of vitality and develop an abnormal growth of weak sickly shoots and foliage which is subject to an attack from disease. Over-

HOUSE PLANTS

watering will sicken the roots and so the plant weakens. Drought is the other extreme that tends to cause the breaking up or shriveling of cells and opens the way for disease. An over-supply of moisture often tends to make the soil impure and sour. In this case shake off the old soil, prune back the top of the plant and cut away the diseased roots, repot in a moderately rich soil and control external conditions until the plant finally regains normal growth.

An excess of heat is one of the greatest drawbacks, the plant becoming weak and exposed to disease.

Gas and draught cause the breathing organs to weaken and the lungs of the plant in the leaf become clogged and diseased.

Earthworms at the roots are a torment to the plant and may be controlled by placing the pot in water up to the surface of the soil. Keep adding water and the earthworm will be driven to the surface, where it may be caught and removed. Watering with lime water will also drive the worm out, but care must be exercised

DISEASES AND THEIR CONTROL

in the use of lime with certain plants. It is not a bad method to remove the entire ball of soil, locate the worm and remove it, for this



A B C D E F

FIG. 19.—DUST AND LIQUID SPRAYS AND SPRAYERS

A, powdered arsenate; B, dust sprayer; C, Paris green (for the control of chewing insects); D, Bordeaux mixture; E, liquid sprayer; F, lime sulphur (for control of fungus diseases).

enemy of pot plants is often a forerunner of disease.

Pots should be washed clean before using. It renders more easy the removal of the ball

HOUSE PLANTS

when necessary and it is certainly more healthful for the roots of the plant.

There is often a flaw in the window glass, which causes a brown spot on the foliage. Do not mistake this for disease. Plants that have been in a shady place for some time may, if exposed suddenly to intense sunlight, show brown around the edges of the leaves, and this may encourage disease but in itself it is not a disease.

The various common diseases have been described under the culture of individual plants. Bordeaux mixture and flowers of sulphur may be secured at any flower shop or drugstore and should be kept on hand. For such diseases as the rose mildew the plants should be dusted with the sulphur every dull day, as it is a preventive rather than a cure.

Treat your plants as you would a child; keep them clean, free from dust, and in giving them a bath do not have the water too cold nor allow the plant to stay wet for a long period.

If you are in tune with your plants and your

DISEASES AND THEIR CONTROL

love for them is genuine, it will not be hard to detect any disorder that might appear, and the next thing to do is to search for knowledge of the disease in the many books written on the subject.

CHAPTER IX

INSECTS AND THEIR CONTROL

THERE are two types of insects which infest our window gardens: the sucking class, which pierce the cells of the plant and suck the sap, weakening the vitality of the plant and finally destroying it; the other the chewing class, which eat part of the root, stem, leaf or flower.

The sucking insects, like the aphides, are controlled by dusting their bodies with tobacco powder or dust. The particles fill up their breathing organs and cause suffocation. The nicotine in the dust also burns tender parts of the body and causes death. Fumigation by burning tobacco stems is our effective method of control in the conservatory or greenhouse, but it is unavailable in the home, for the entire house would become foul and the necessary smoke to destroy this pest would be too great

INSECTS AND THEIR CONTROL

for the number of plants in the window. It should never be tried in the home. Another remedy is to spray with Black Leaf 40 as rec-



FIG. 20.—PLANT LICE OR GREEN FLY (APHIDES) ON THE YOUNG GROWING STEM OF A VINCA VINE

HOUSE PLANTS

ommended on the can or bottle. Care should be exercised not to get the solution on the wall-paper or furniture. Of the many insecti-



FIG. 21.—DEATH TO GREEN APHIDES OR PLANT LICE

cides on the market most will do all they claim.

The scale insects are harder to control. The best remedy is fir-tree oil, which should stand overnight, then the cream or scum be taken off

INSECTS AND THEIR CONTROL

and the solution diluted. A clean sponge is then used to anoint the plant and the insect is dislodged. Fish-oil soap has become a favor-



FIG. 22.—THE COMMON SCALE INSECT (*LECANIUM HEMISPHERICUM*) ON A BOSTON FERN

HOUSE PLANTS

ite because of the easy method of application. Shave off bits of the soap and dissolve them



A

B

FIG. 23.—PREPARATIONS FOR SPRAYING. A, FISH-OIL SOAP; B, ROSIN FISH-OIL SOAP

Both are good preparations to spray and wash foliage for scale insects, plant lice and mealy bugs.

in boiling water, then dilute to make suds in a bath tub, laundry tub or bucket; then submerge the plant in the solution.

INSECTS AND THEIR CONTROL

The soil should be held in the pot by the left hand, or by spreading the fingers of both hands over it, inverting the pot and washing the



FIG. 24.—THE WHITE FLY (*ALEYRODES CITRI* AND *A. NUBIFERA*)
ON A FUCHSIA LEAF

plant. After the plant has had a thorough bath, allow it to stand for two or three hours and then spray with clean water. This treat-

HOUSE PLANTS

ment will control plant lice, mealy bug, red spider and white fly.

The red spider, which is a common pest,



FIG. 25.—SURE DEATH TO WHITE FLY AND APHIDES
To control green aphides, two tablespoonfuls to a pail of water.

especially on plants that have been allowed to get too dry, is best controlled by a solution of tobacco stems boiled until it is dark brown. Spray it with all the force available, directing

INSECTS AND THEIR CONTROL

the spray to the under side of the foliage. This is also an advisable treatment for thrips.

If the enemy you are to combat is a chewing insect like the rose beetle, spray the plant with arsenate of lead as recommended under the head of individual plants in chapters to follow. The paste and powder forms of arsenate have been found of equal value. Paris green has been extensively used, but if combined with water or even in the dust form it is apt to injure the foliage. Care must be taken in the application of any poison to plants.

If insects attack your house plants the first thing to find out is how they secure their food; then apply the proper remedy. Do not put it off until tomorrow, for one must remember that insects are in business for their health, and this means that the greatest vigilance must be exercised even where the plants appear fairly clean.

The lack of water, too much water, too much food develop a weak, tender growth; bad air, too little sunlight and general neglect will in-

HOUSE PLANTS

vite these insect enemies to infest the window garden and in a short time it becomes a sorrowful sight.



FIG. 26.—MASS OF MEALY BUG (*PSEUDOCOCCUS CITRI* AND *P. LONGIFILIS*) ON A *COLEUS* PLANT

These dreaded enemies of our choice foliage and flowering plants steal into our gardens in a single night. Keep a constant watch!

CHAPTER X

GENERAL PRINCIPLES AND METHODS IN PROPAGATION

PLANTS may be multiplied in various ways: seeds (pansies); spores (fungi, mosses and ferns); stem cuttings (geraniums); suckers (chrysanthemums); leaf cuttings (rex begonia and gloxinia); divisions (asparagus sprengeri plants); root cuttings (blackberry); budding (peach trees); grafting (apple trees).

In the propagation of plants by seed flat boxes are generally used four inches deep and two feet square. The bottom of the box is covered with decayed sod and then filled to within half an inch of the top with clean, sifted garden loam, free from manure. The seeds are scattered broadcast and pressed into the soil, then covered with clean sand to the depth of one-half to two-thirds the diameter of the seed,

HOUSE PLANTS

watered carefully, covered with glass and put in a warm place.

With both seed and cuttings regular and

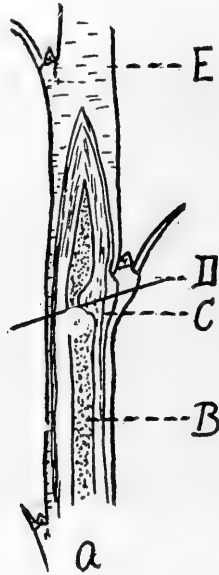


FIG. 27.—INTERIOR OF A STEM

A, stem; B, hollow pith; C, thick growing tissue (cambium layer); D, cut through growing tissue; E, node.

perpetual heat, which is not easy to secure in the home, but possible in the conservatory, is of great advantage. Shade the box with paper

METHODS IN PROPAGATION

until the seeds germinate, to prevent drying off. Too much watering weakens vitality. Never allow the seed to germinate and then dry out. Keep the seed bed always moist but



FIG. 28.—A SIFTING PAN, FLAT, AND TAMPER FOR THE PROPAGATION OF PLANTS FROM SEED

never wet. With rare exceptions it is not advisable to soak the seed overnight; it should be planted in the dormant state in the soil. After the seedlings reach a height so that they can be easily handled transfer them to a small pot.

HOUSE PLANTS

In the case of ferns I have known amateurs to propagate them successfully from spores. Fill a six-inch pot with finely sifted soil, cover

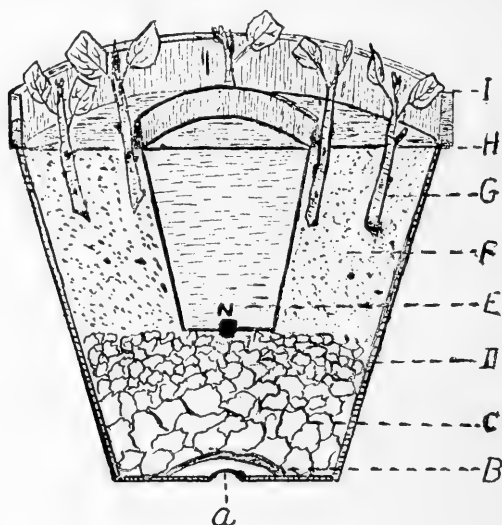


FIG. 29.—DOUBLE PROPAGATING POT

A, drainage hole; B, crock to promote drainage; C, rough material; D, gravel; E, crock pot filled with water; F, clean sand; G, cutting; H, surface of soil; I, leaves cut in half to prevent transpiration (the pot in the center should be made of clay and plaster of Paris); N, cork filled with holes.

the surface with sifted earth about a quarter of an inch in depth. Take a frond of fern having the brownish-black clusters on the under side,

METHODS IN PROPAGATION

or in strips along the margin. If the clusters are ripe gently shake the frond, allowing the apparent powdery substance to be scattered over the soil. Press down lightly, cover with glass and place the pot in a vessel partly filled with water so that the seed may be watered from below. Never allow the surface of the soil to get dry. Allow the pot to stand in the vessel only while watering. Remove to a warm shady place. The tiny ferns are extremely tender and difficult to start, but a trial at this method of propagation is fascinating. Stem cuttings are commonly used in the propagation of home-grown plants.

It is of the greatest importance to have a sharp knife. Cuttings in general should not be over three to four inches in length. Cut smoothly at the node where the leaf connects with the stem, because the tissue is thicker at this point than at any other and there is also more growing tissue exposed. Remove the leaves with a knife; never break them, for this will injure the stem. The top leaves should

HOUSE PLANTS

be cut in half to prevent evaporation of moisture from them.

Cuttings should always be made from young

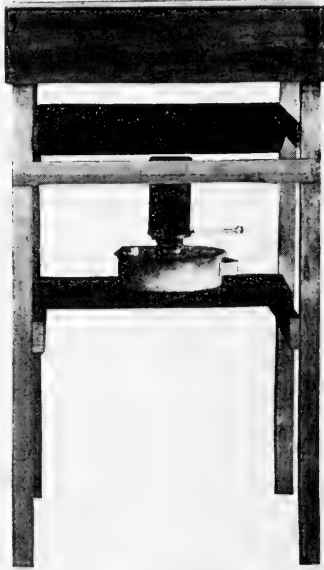


FIG. 30.—HOME-MADE PROPAGATION BED

Note black pan above the lamp to retain water which aids in keeping moisture in the soil.

vigorous wood. In old wood the cells are hardened and roots seldom form. Place the cuttings in clean sand, never pushing the cutting in the sand, as this will injure the wounded

METHODS IN PROPAGATION

tissue and cause decay. Fit the sand tightly about the cutting and give a good watering.

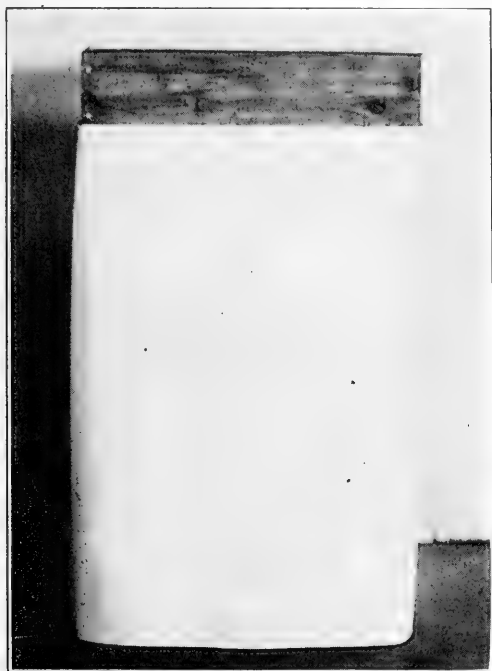


FIG. 31.—PROPAGATION BED COMPLETE

Cloth or paper may be placed as shown in photograph in order to keep the heat in. Bottom heat is of the greatest importance for seed and propagating beds to insure a better growth.

Shade the cuttings from the sun by cheesecloth or newspapers for three to six days, so

HOUSE PLANTS

that they do not lose vitality from wilting. After the roots are formed remove to small pots of earth, because there is little or no food in the sand, and after the root system is formed the roots search for food and moisture which is found in the soil.

All cuttings are not made alike. The sand in a cutting bed should always be firm, never allowed to dry out, moist but never wet. The pot method is also very satisfactory. Leaf cuttings are commonly used to make plants like the begonia. Cuts should be made across various well-developed veins of the leaf, the leaf fitted, bottom side down, on the surface of the sand. It may be pinned down with hairpins or toothpicks. Small pieces of the leaf containing a vein, thick end planted in the soil, are also satisfactory.

In the case of gloxinia the leaf is planted in the sand with the stem covered. Roots form on the stem and a young plant appears.

I should not advise bell jars or glass dishes placed over the cuttings unless they are re-

METHODS IN PROPAGATION

moved part of the day. The cuttings require clean air to breath and they thrive much better when this is supplied.

Sand is used in propagating cuttings be-

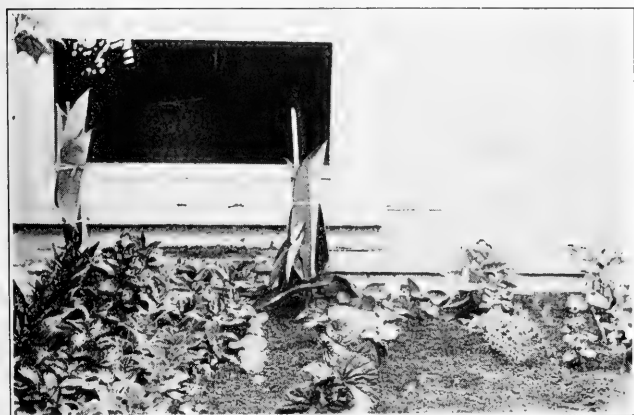


FIG. 32.—A PROPAGATING BED

cause it is practically free from fungus growths.

The various plants described in the following pages have their favorite methods of propagation as indicated below:

SEED

Chinese primrose.
Abutilon.

CUTTINGS

Geraniums.
Flowering begonias.

HOUSE PLANTS

SEED

Cineraria.
Cyclamen.
Petunia.
Lobelia.
Flowering begonia.

CUTTINGS

Chrysanthemums.
Carnations.
Fuchsias.
Heliotrope.
Pelargonium.
Rose.
Stevia.
Vinca.
English ivy.

LEAF CUTTINGS

Gloxinia.
Rex begonia.
Lilac.
Rose—not practical.

PLANTS PROPAGATED BY DIVIDING THE OLD PLANT, LEAVING ROOTS ON BOTH DIVISIONS

Boston fern.
Vinca.
Saxifraga.
Asparagus sprangeri.
Asparagus plumosus.

CHAPTER XI

BULB CULTURE

SEPTEMBER is the month when song gives place to silence and the moon of the first frost awakens a desire to renew the summer, and there is nothing that will satisfy this longing so well as the branch of gardening which is peculiar to itself, the forcing of bulbs.

To get perfection in the bloom of most of our common bulbs they should be secured in September. Of course the time for blooming depends on various conditions—variety of bulbs, vigor, soil used, method of handling, temperature and watering—but the following directions may be considered as general.

It is always advisable to use very rich soil but never with fresh manure. After placing a bit of crock over the hole in the bottom of the pot and an inch of well-rotted cow manure,

HOUSE PLANTS

then some good compost soil, place the bulb the proper depth in a little sand, cover with soil and firm by striking the bottom of the pot on

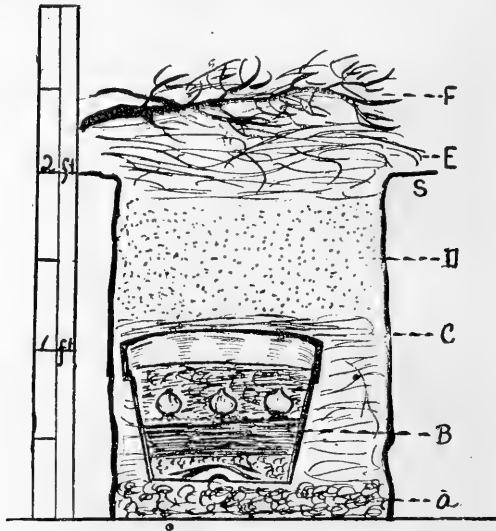


FIG. 33.—DIAGRAM SHOWING HOW TO POT AND PIT BULBS
A, three inches of coarse ashes; B, pots containing bulbs; C, scattering of straw over pots; D, sand; E, straw or leaves; F, brush to prevent straw from blowing away; S, surface of soil.

some object. Then store away in a cool place until a good root system has been developed. It is sometimes well to store out of doors. Dig a trench in the garden, place the pots below the

BULB CULTURE

frost line, with about an inch of ashes beneath the pot. The soil in the pot should be moist but not wet. Cover the pots four to five inches



FIG. 34.—TAPPING EDGE OF POT IN ORDER TO REMOVE SOIL FROM POT

with sand and above this, straw. Put branches loosely over the straw to prevent it from blowing away. After the given period the pots may

HOUSE PLANTS

be easily removed. Do not allow bulbs or soil in pots to freeze while removing, as it would be a serious check to growth. Another method



FIG. 35.—POSITION OF HAND OVER SOIL IN ORDER NOT TO DISTURB THE ROOT SYSTEM

is to clean out the hotbed and treat it as in previous method. Some use ashes to cover the pots.

BULB CULTURE

Another method is to place the bulbs in a cool cellar and cover with soil or straw, but in



FIG. 36.—A BEAUTIFULLY DEVELOPED ROOT SYSTEM
Healthy and vigorous. Note the position of the hand while examining the roots.

this case the soil should be examined and if dry given sufficient water. Never store near a fur-

HOUSE PLANTS

nace or where there is any gas. Pots should always be placed on soil and never on a shelf,



FIG. 37.—METHOD OF RESTORING THE BALL
Place the pot completely over the ball of earth and roots before
inverting the plant right side up.

to develop root systems. Most of the Dutch bulbs require from six to seven weeks in the dark in order to develop a sufficient root sys-

BULB CULTURE

tem to support a perfect flower. After a given period examine the root system by knocking out the ball of earth (Fig. 34), holding the hand over the surface of the soil (Fig. 35), and with the other hold the pot, striking the edge of the pot on some object. If the root system is well developed (Fig. 36) and the tips of the leaves are poking through the soil, place the pot over the roots without moving the ball (Fig. 37), and then turn right side up. Bring the bulb to light, feed and care for it, stirring the soil over the surface of the pot if a green moss appears. Never allow the pot to stand in a vessel containing water, or the roots will decay and the bulb rot.

The bulbs placed in trenches require only one watering when placed. No other treatment is necessary until removed to the light.

When bulbs are raised in water, such as the Chinese lily, which is always acceptable in a home, take care never to have an excess of heat or dry air. This type of plant does best where there is a great deal of moisture in the air.

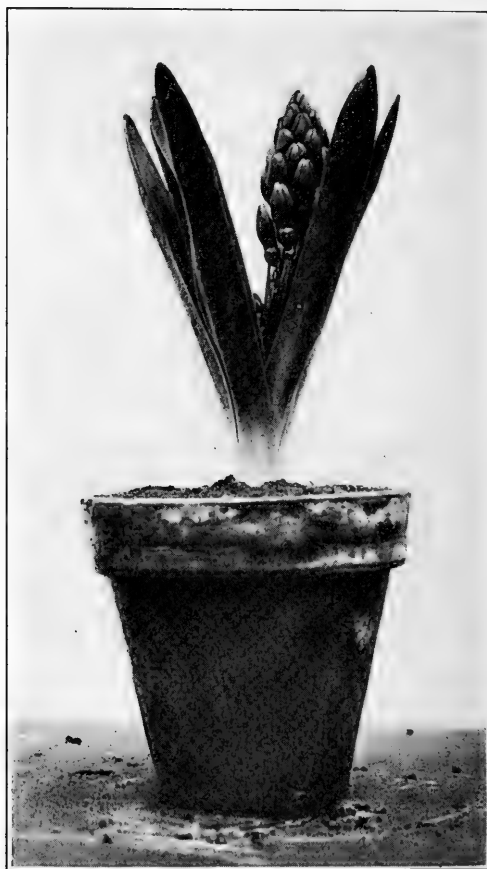


FIG. 38.—HYACINTH WITH A WELL DEVELOPED ROOT SYSTEM
Note growth of flower stem even with tips of leaves. In three weeks
the flower will be two to three inches above the leaves.

BULB CULTURE

Bulbs should never be placed in a draft or in a room where there is any gas, or the flower will bloom close to the soil and snug to the short leaves. Especially be careful when the bulb is in bloom, for the flower is injured by gas or direct rays of the sun. To have the bloom last keep it in a cool place. If the bloom comes sooner than desired store in a dark cool room, 40° F., and change to higher temperatures gradually.

The only insect of great danger to the plant is the plant louse (aphis) destroyed by dusting with Pyrethrum or tobacco dust.

It is never advisable to hold the bulbs over for another year of house culture. They may be planted in the garden, but for forcing, fresh vigorous bulbs should be secured each year.

HYACINTH

Nat. Ord. Lilaceæ

The origin of this flower is supposed to date back to the fabulists of antiquity. Hyacinthus, a boy favored

HOUSE PLANTS

by the gods, was supposed to be the son of a Spartan king and a great favorite of Apollo, who while pitching a game of quoits first observed Zephyrus' envy. This envious spirit directed one of the quoits, which struck the head of Hyacinthus and killed him. It was concluded that Apollo transformed the body of his favorite into a flower, and so the origin of hyacinths.

This flower is native to the Mediterranean region. It was known back in the time of Vespasian and mentioned by Dioscorides. It was introduced into England about 1596. There are more than four thousand varieties developed since 1629. Its rich fragrance, varied color and graceful beauty lends a charm to the home or conservatory.

The best results are realized where the following soil table is followed:

Decayed sod chopped fine with garden loam.....	2½ parts
Shredded cow manure.....	1 part
Sand	½ part

Place a little cow manure, well decayed, in the bottom of the pot and then sand directly under the bulb.

One to three bulbs may be placed in a six-inch pot. A ten-inch pan-shaped pot with six bulbs gives great satisfaction.

BULB CULTURE

Keep the soil moist, but never wet, and after the leaves are well developed give a little weak liquid cow manure every two weeks or about



FIG. 39.—SEVERAL WELL DEVELOPED BLOOMS OF THE HYACINTH
IN A PAN

A strong root system must be developed while in storage in order to get such results in this limited amount of soil.

half a spoonful of nitrate of soda dissolved in a cup of water. The bulb should be placed one and a half inches below the surface, then stored



FIG. 40.—THREE WELL DEVELOPED HYACINTHS IN A THREE-
QUARTER-SIZED POT

BULB CULTURE

for from six to eight weeks in order to develop the best root system.

On bringing the bulb to light the temperature should be about 50° , slowly rising to 65° .

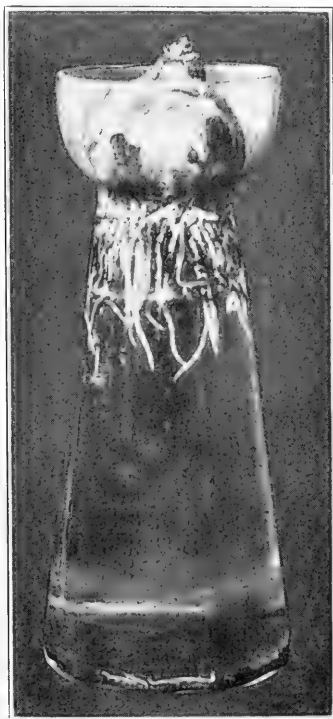


FIG. 41.—A HYACINTH BULB WITH A WELL DEVELOPED ROOT SYSTEM IN A BULB JAR

Note that bud has not started.

HOUSE PLANTS

With this treatment the bulb should produce a fine bloom ten to twelve weeks after removing to the light.



FIG. 42.—HYACINTH WHICH HAS BEEN GIVEN TOO MUCH WATER AND FOOD

Note the weakened condition of the foliage.

Hyacinths may also be raised in a glass bulb jar. The color of this jar does not affect the

BULB CULTURE

growth of the roots. Keep the jar in a dark place for a week and bring to the light.

Keep the water in touch with the bulb and do not change the water in the jar. The tiny green growths appearing in the water die, decay, and become food for the plant. Raise the bulb slightly, just enough to admit sufficient Croton water so that the bulb rests in it. Never use spring water.

There are many satisfactory varieties, but the following may aid in selection:

For the glass jar varieties developed in water:

Ball of Gold.....	golden
Gertrude	pink
Grand Martre.....	bright blue
L'Innocence	white
Roi des Belges.....	red
Rosea Maxima.....	pink

Varieties for window decorations in pots and pans:

Gertrude	deep pink
Grande Blanche	pure white
L'Innocence	pure white
Marie	dark blue
Regulus	light rose pink
Mareno	light blue

HOUSE PLANTS

King of the Blues.....	bright blue
Charles Dickens.....	light pink
La Grandesse.....	fine pure white

TULIP

This beautiful flower derived its name from the Persian word, *Thoulyban*, a turban; and is not unlike the eastern headdress.

The Duc Van Thol, of which the type is *Tulipa suaveoleus*, from the Latin *suavis*, sweet, is the best for cultivation, being early and easy to raise.

The tulip was introduced into England from the south of Europe about 1603 and has always been the subject of some of the most delightful folklore and myths.

The best display of these flowers is shown when six to eight bulbs are grown in a flat eight-inch pot four inches deep.

Place about an inch of well-decayed horse or cow manure in the bottom of the pot, then add some rich garden loam, mixed with finely chopped decayed sod.

Soil and sod.....	2½ parts
Manure	1 part
Cocoa fiber.....	¼ part
Sand	¼ part

BULB CULTURE

Place the bulbs a fourth of an inch below the surface, each bulb having a little clean sand at



FIG. 43.—TULIPS

Note the tall erect stems, an indication of a strong root system.

the base. The pans or pots should then be stored in a cool dark place for five or six weeks.

HOUSE PLANTS

After exposing to the light give the same treatment as for hyacinths.

The blooms should be at their height from five to six weeks after exposure to the light. The bloom will last much longer if not exposed to direct sunlight. The plant should always be protected from draught and never allowed to dry, especially after blooming.

The tulip is very susceptible to plant lice (aphides) but these may be controlled by keeping a close watch, and when the pest appears, apply tobacco dust or wash the leaves carefully with a soft sponge and a solution of nicotine water in the proportions advised on the package secured from any seed house or florist. There is no danger of the tobacco dust injuring the soil when washed from the leaves. It acts as a fertilizer.

The best varieties for pan culture are:

Belle Alliance (Waterloo)—scarlet.

Chrysalora—yellow.

Duc Van Thol—various colors, early.

Duchess de Parma—red and yellow band.

BULB CULTURE

NARCISSUS

Nat. Ord. Amaryllidaceae

The Greek word, *Narke*, from which the flower really takes its name, signifies narcotic, and the dreaded Dis and the Furies had this flower woven to decorate their brows. The flower was the last token put upon the dead, because the Greeks thought that the dead gave off an evil emanation, producing dullness, madness and death.

The flower is supposed to have been originated by the fate of Narkissas, a beautiful youth who bound Echo's heart in love to his, but did not love her in return. She became broken-hearted and faded to a voice, which was heard in lonely places.

Narkissas while lurking lazily about a spring caught sight of his own reflection in the water. He loved it and being lured day after day to admire himself he soon grew weak, not even taking time to eat or drink. Finally he died admiring himself and when the nymphs came to remove the body to the funeral pyre, it had changed into a white flower, which we call the poet's narcissus.

It was a favorite among the Greek gods. It is said that Pluto in a crafty manner enticed Proserpine into hell with its beauty and delicate fragrance, which dulled and drowsed her senses.

Many interesting myths are woven about this flower.

HOUSE PLANTS

The narcissus used so much as a cut flower is seldom raised as a pot plant but there are



FIG. 44.—A BEAUTIFUL GROUP OF DOUBLE NARCISSUS

few home-grown bulbs that will last so long or give as much satisfaction.

The soil should be tolerably rich and a simi-

BULB CULTURE

lar treatment to that of the hyacinth will bring results in about the same time required to develop that bloom, depending much on the size and vigor of the bulb.

Another method has lately been developed with great satisfaction. Place the bulbs in loose soil or cocoa fiber until the roots are about an inch or more in length, then remove carefully without injuring the roots. Place in a bowl at least two inches deep. Fit pebbles about the roots over the top of the bulb, then fill with Croton water and cover or mound the bowl with moss. The bulbs will develop leaves and flowers and this arrangement makes a very attractive centerpiece.

If plant lice are present they will sometimes attack the tender leaves. Dust with tobacco powder or Pyrethrum.

Do not allow the flower to come in contact with any gas, or the petals will curl and turn brown.

If the bud shows a tendency to turn brown before developing, the soil may be too poor to

HOUSE PLANTS

supply sufficient nourishment; there may have been some condition that destroyed the roots, or the plant may have been exposed to a cold draught or gas. The last condition shows in the tips of the leaves turning brown.

A little weak liquid cow manure should be added during the growing season to the soil. Stir the surface of the soil shortly after application. This treatment will add to the luster of the foliage and the size and color of the flower.

Varieties for winter culture in pots and pans:

Single:

Trumpet Major—yellow.

Triumph Minor—yellow trumpet and white perianth.

Obvallaris (Tendy Daffodil)—rich yellow.

Poeticus Ornatus—white.

Double:

Incomparable—yellow and orange.

Pseudo Plenus—yellow and white.

Von Sion—all yellow.

The best double white is Alba plena odorata.

BULB CULTURE

EASTER LILY

Nat. Ord. Liliaceæ

The Easter lily has derived its name from the Celtic word *le*, meaning whiteness. In religious beliefs as well as myth and folklore the lily has taken a prominent place.

Its purity made it a fitting flower to decorate the altars of the Virgin, and when she ascended her tomb was filled with lilies and roses.

In the Garden of Gethsemane the lily held its head high as Christ passed, but on seeing all the other flowers bowing their heads in sympathy with him, it was overcome with grief and shame and has never lifted its head since.

The Greeks and Romans placed a wreath of lilies and wheat as a crown on the heads of a bride and groom, symbolizing purity and fertility.

The lily is symbolic of good fortune and a protection from evil spirits.

Judith decorated herself with lilies when she went to destroy Holofernes, in order to keep away the evil spirit that prompted or guided. From the early periods until now the lily has been a general favorite.

We always associate this flower of purest white, waxen texture and delicate fragrance with the Eastertide. It is ornamental for both home and church.

HOUSE PLANTS

Secure strong healthy home-grown bulbs about the last of November. Place three or four in an eight-inch pot filled with a very rich,

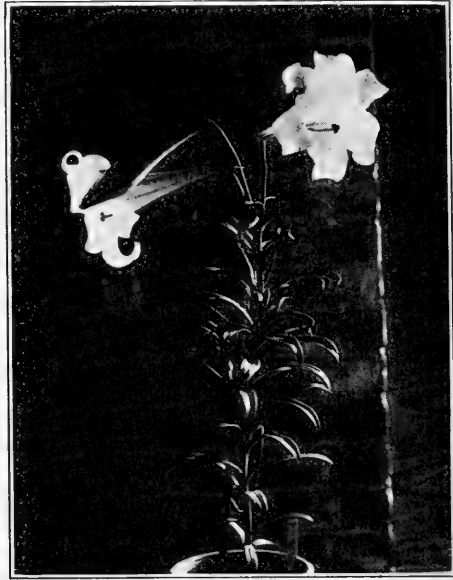


FIG. 45.—EASTER LILY

light sandy loam, mixing about one-third the bulk of well-decayed cow manure shredded fine. Cover the bulbs about one inch with a little clean sand. Give one watering and plunge the pots in ashes, covering with leaves or straw to

BULB CULTURE

prevent the frost from injuring them. After six weeks bring to the light but keep in a cool place, gradually increase the heat to 65° or 75° and in ten to twelve weeks after removing from the pot the flower will be developed to perfection.

After the plant is about half grown apply a little liquid cow manure every two weeks until the buds are well developed.

If the bulbs are kept cool, moist and away from air while in storage, and the temperature is controlled, never having the plant in excessive heat, these plants will develop a very satisfactory bloom. For Christmas blooming start the bulbs in September.

The *Lilium longiflorum* has become a general favorite, not being as subject to disease as the *Lilium harrisii*. The flower is more enduring, but a temperature at least 10° lower will be better than the temperature for the *harrisii*.

The Bermuda-grown bulbs are preferable to the Dutch-grown.

The only insect that troubles it is the aphid.

HOUSE PLANTS

Dust with powdered tobacco or Pyrethrum.

If bulbs are to be retained, withhold water for two weeks and store in cool, sheltered place.

Put bulbs in clean sand and cover with soil and then with four inches of dry leaves. In winter cover with ashes.

It is economy to secure new bulbs each year for forcing; the old ones should be planted out of doors.

After the forced plants are well started never allow them to dry out or to stand in a vessel filled with water, as the roots are very sensitive to both extremes.

The following, though not known as Easter lilies, are treated in the same manner and are very satisfactory house plants:

Lilium speciosum rubrum or *roseum* (Japan)—delicate pink, almost white, spotted red. Grows about three feet tall. Four to five flowers to the stalk.

Lilium auratum vittatum has a magnificent flower, large white center band of deep pink and the entire petal spotted with crimson. This flower is delightfully fragrant. A single stem produces on an average from eight to fifteen flowers.

BULB CULTURE

CALLA LILY (EGYPTIAN OR ARUM LILY, LILY OF THE NILE)

Nat. Ord. Aroideæ Richardia ethiopica (synonym *R. africana*)

Pliny was the first one to call this attractive member of the Arum family calla.

Its native home is along the banks of the Nile, and its glossy green leaves and waxy white blooms abound during the season of high water. After the Nile slowly resumes its original bed, the mud-coated banks become parched and the tops of the calla die down, fall over and protect the roots against the burning rays of the tropical sun. In this temporary bed of the river Nature rests the bulbs for several months until the spring freshets again awaken them to new life.

The large glossy green leaves gracefully arranged on their long stalks and the waxy white blossom make the calla one of the favorites among the common house plants.

In order to get the best results for winter blooming, place the larger bulb in a six-inch pot, a little well-rotted manure at the bottom of the pot. Mix some finely shredded cow ma-

HOUSE PLANTS

nure in garden loam containing well-rotted sod.

Place the bulb one and one-half inches below

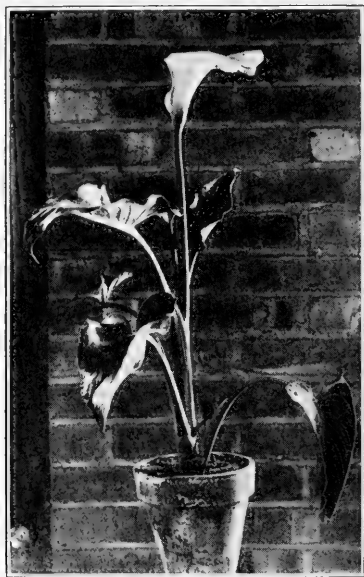


FIG. 46.—LILY OF THE NILE, CALLA

the surface and firm the soil by striking the bottom of the pot against the potting table three or four times.

It is not advisable to plant more than three corms in an eight-inch pot, which should give

BULB CULTURE

several blooms each. All offsets should be removed as they appear, as they sap the vitality of the parent plant and prevent the best results in the number and size of blooms. The offsets may be planted in small pots and developed.

If possible during the growing season give a little weak liquid manure water every week; this will add to the luster of the foliage, size of the flower and general vigor of the plant. Do not plant small bulbs in large pots filled with richly manured soil or no leaf and flower will develop.

The calla lily, being a native water plant, requires a great amount of water, but do not allow the pot to stand in a jardiniere partly filled with water, as this will rot the roots and sour the soil. It also requires warmth, and the slightest chill or cold draught will give it a setback; the leaves will turn yellow and sickly. An occasional sprinkling and washing of the leaves with a soft sponge to keep them free from dust is of the greatest importance, but

HOUSE PLANTS

never put the plants out in the cold rains for this purpose.

The calla may be kept growing all the year round and for several years in the same soil, but the best results are obtained by giving the bulb a complete rest. Turn the pot on its side in some shady place where water will not stimulate growth, and allow the roots to dry off during the summer.

If the plants are treated in this manner in June and repotted the middle of September to the first of October the bloom will appear the last of December or the middle of January, depending on the vigor of the bulb, watering, warmth and general treatment.

If the bulb starts to decay it is best to dispose of it and not to use the same soil in which decay appeared. There is practically no disease that attacks the calla.

The only insects that attack this plant are the aphides, which are usually found on the young growing leaf before it has unfolded, also on the under side of the older leaves; and the

BULB CULTURE

white flies, which are found mostly on the under side of the leaves. To control the aphid dust with Pyrethrum as soon as the lice appear. Wash with fish-oil soap or tobacco water extracts. Dust with snuff or tobacco dust. For the white fly wash the under side of the leaves with Hughes' fir-tree oil or suds of fish-oil soap, using a soft sponge free from any grit. Place the palm of the hand on the upper surface of the leaf and wash from the midrib of leaf to the outer edge.

Varieties:

Albomaculata—spotted foliage.

Hastata—yellow calla.

Elliottiana—yellow calla, large flower.

Black calla.

Godfrey—dwarf, everblooming.

LILY OF THE VALLEY

Nat. Ord. Liliaceæ

The lily of the valley is also called convallaria, from the Latin *convallis*, a valley, and *rica*, a mantle, in reference to the dense covering formed by the leaves.

Gerarde was one of the first to describe this flower

HOUSE PLANTS

in 1596 and since then it has grown in favor. In New York City the florists use \$50,000 worth of this fragrant little flower for decorative purposes alone each year.

This graceful drooping flower has increased in favor since 1596, and may now be grown in pots and boxes in the home. The pips or corms should be taken up late in the fall and allowed to stand from one to two weeks in a cool place to ripen. The best success is reached where the pips or corms are planted six inches deep in a box, on the bottom of which is spread an inch of sphagnum moss and then two inches of garden loam and sand in equal proportions. Place the pips and cover with one inch of same soil. Keep the box in a cool place for at least four weeks, giving it water when necessary, gradually bringing the plants into a heat of 70°, and cover the sides and top with cheesecloth. Place the box where it may receive a little bottom heat, keep the soil moist and after the stems are four inches high and the buds appear, remove the cheesecloth and allow the plant a little light, which will gradually darken

BULB CULTURE

and strengthen the leaves. Guard against too much light at first. If the pips are planted every three weeks a succession of blooms will last until spring. The delicate fragrance, and graceful bell-shaped flower surrounded by broad green leaves make the lily of the valley a desirable pot plant as well as a box plant. It is difficult to find the proper conditions in the home for the best success of this flower, so it is generally advised to raise it in conservatories or greenhouses.

CYCLAMEN

Nat. Ord. Primulaceæ

The name is derived from *kyklos*, meaning circular, which refers to the shape of the leaves.

The *Cyclamen persicum* is a native of Persia and is noted for its acidity. In Sicily the cyclamen is the principal food of the wild boar; hence the name "sow-bread" was given to it. This is contradicted by Pliny, who states that sow-bread was poisonous to swine. However this may be, the flower with beautifully marked foliage has long been a favorite, for we find beautiful illustrations made in 1612.

HOUSE PLANTS

There are few flowers as pleasing or attractive for the window or conservatory as the cyclamen.



FIG. 47.—THE CYCLAMEN

The flowers have no commercial value, but when produced in pots they are satisfactory for both bloom and foliage.

BULB CULTURE

It is advisable to secure well-developed bulbs from the seedsman or florist. Insist on bulbs grown from seeds. These are planted in February or March and if properly grown will be an inch in diameter by September. The soil should consist of

Garden loam.....	1 part
Leaf mold.....	1 part
Well-rotted cow or horse manure.....	1 part
Coarse sand.....	1 part

All of these should be thoroughly incorporated in a five-inch pot. The bulb should be pressed into the soil about half its depth and kept in about 50° of heat, preferably a shady place. As the plant increases in growth raise the heat to 60° and give more light but never allow the direct rays of the sun to come in contact with the plants. They should never be allowed to dry out, but do not give an excess of water at any time. During the flowering season, which should be from the middle of December until the last of March, to increase the number and size of the bloom the

HOUSE PLANTS

plants are treated with a little liquid manure every week, or a half-teaspoonful of nitrate of soda in a cup of water about once in three weeks.

After the flowering season is over the bulbs should be gradually ripened by placing them in the shade, never allowing them to dry completely out. If the bulb keeps plump, even though the leaves die, it will be in good condition to repot in September. If fleshy roots have made their appearance, be careful not to destroy them in repotting the bulb. The flowers are smaller and earlier on the old bulb, and it is advisable to secure new bulbs about an inch in diameter each year.

The only real enemy of the cyclamen is the thrips, which is easily controlled by spraying forcibly with cold water on the under side of the leaves. Add a little nicotine (Black Leaf 40), which will also destroy aphides, should any be there. If the plants are kept growing vigorously they are seldom attacked by insects.

This plant is resistant to all diseases, but the

BULB CULTURE

roots and bulb will decay quickly if given too much water.

The *Cyclamen persicus* is the best variety for home use. There are many varieties now on the market, most of which are good.

FREESIA

Nat. Ord. Iridaceæ

This fragrant bulbous plant was introduced from Cape of Good Hope about 1815.

The loose clusters of the flower gracefully arranged on a slender stalk overtopping the foliage, giving to the surrounding air the most agreeable odor, make this flower a favorite.

The derivation of the name is not known.

The soil should be light garden loam, rich in pulverized cow or sheep manure, well decayed.

There are six to twenty-five bulbs in a cluster. These may be placed one-half inch apart, and a half-inch below the surface, in pots or pans of desired size.

It is not necessary to give a starting period

HOUSE PLANTS

in darkness, as the roots and tops should grow at the same time. Keep the soil moist but never wet, and if it is rich no feeding will be necessary.

Keep from draughts and excessive heat; a temperature of 50° is best to start the bulbs.

It requires about sixteen weeks from planting to time of bloom. After the bloom has passed the pips or bulbs may be shaken out, tops dried, and stored in a little dry sand, mixed with soil free from manure, in a cool, dark cellar. The bulbs may be used with success the following season. There are no insects or diseases that trouble these plants.

Varieties:

Bermuda Freesia—pure white.

California Freesia—white flowers with a yellow throat; very fragrant.

Leichtlini. If grown outside the flower is white, sometimes with a greenish tint, and if grown inside a soft yellow with a purplish tint.

Refracta alba—pure white, with two orange-yellow flowers on the lower segments. Sometimes these blotches are very faint. This variety is best adapted for home culture.

BULB CULTURE

AMARYLLIS

Nat. Ord. Amaryllidaceæ

The *Amaryllis belladonna* or, as sometimes called, the belladonna lily, is a native of the Cape of Good Hope. It is found in several of the countries of Europe such as Portugal and Italy and has become naturalized.

The shepherdess, *Amaryllis*, was strong and graceful and the beautiful color of her skin made her famous.



FIG. 48.—AMARYLLIS FORMOSISSIMA

HOUSE PLANTS

This flower derived its name from this beautiful girl mentioned by Virgil.

The amaryllis is greatly admired, first, because of its gorgeous color, and second, because it is rarely grown in this country.

The *Amaryllis belladonna* is best grown in a seven-inch pot filled with sandy loam, two and one-half parts; decayed cow manure, one and one-half parts; well mixed. If the soil is not sandy, add a little sand, but never use fresh manure.

Place a little clean sand in the center of the pot on the surface of the soil and press the bulb in about one-third of its depth. The soil should be loose when this is done, so as not to injure the bottom of the bulb.

Keep in a temperature of about 50° for three or four weeks, and gradually bring up to 75°. Increase gradually the supply of water as the leaves develop, but never allow the pot to stand in a vessel containing water. If the bulbs are planted by July first, they will give a satisfactory bloom in September or

BULB CULTURE

October. A succession of blooms may be realized if these bulbs are planted every month, allowing from three to four months for development.

There is a general complaint that the plants do not bloom every year, and that the leaves are short and the outer ones turn yellow before the flower bud shows; the bud seldom develops under this condition. The trouble probably is that the bulb has not rested. It is necessary to give the bulb two or more months' rest in a cool, shady place, never allowing the bulb to become shriveled from drought. After a complete rest, repot as directed. The flower comes to perfection if placed in a warm spot where there is plenty of moisture, with an application of weak liquid manure every two weeks after the leaves are well developed.

The amateur will find the best satisfaction from buying well-developed bulbs, rather than attempting to develop them from seed or offsets.

Varieties:

HOUSE PLANTS

The old-fashioned variety is the *Amaryllis belladonna*—bright pink.

The *Formosissima*, crimson, is also a favorite.

Pallida was formerly called *belladonna minor*, bearing a long spike, small pale flowers.

Hybrids of *vittata*, flowers striped and flaked.

Johnsoni—very large, crimson, striped with white.

VALLOTO

Nat. Ord. Amaryllidaceæ

The valloto or Scarborough lily was named in honor of Pierre Vallot, a noted French botanist. It was introduced into cultivation in 1774 from Cape of Good Hope.

The Scarborough lily is a desirable bulbous plant for early fall flowering. Being a native of boggy places, the bulb should be planted in two parts light garden loam containing one-half decayed sod, one part muck soil, and one part decayed shredded cow manure. A little sharp sand sifted through the soil will tend to lighten it.

A large bulb would require a five-inch pot, or three to five bulbs may be planted in a ten-

BULB CULTURE

inch pot, the soil barely covering the crown of the bulb. Put the pot in a moist place, temperature 60°, until the flowering shoots appear. Then bring the pot into the direct sunlight and give a liberal supply of water.

After the bloom has passed the bulb should rest at least three months, water being withheld except for three or four light applications during the resting period. The pot should be put in a cool place protected from frost. Do not repot each year, as the bulb does better if not shifted often. If the bulbs are started in June the plant should be in full bloom the latter part of August.

The valloto increases rapidly from offsets, and these should be removed by picking the young bulbs from the surface of the soil without disturbing the old bulbs. The offsets, if planted in the garden, will bloom the second season. The flower spikes support from five to seven flowers each, and this makes a beautiful display where there are five or eight bulbs in a ten-inch pot. If the bulbs are planted out in

HOUSE PLANTS

April, they will bloom in June. They should be removed after the first light frost. Whenever the plants become pot-bound, shift to a larger pot, and never allow the soil to dry out during the growing season, especially after the flower buds appear.

The *Valloto purpurea* produces a brilliant scarlet blossom and is a common pot plant for porch decoration in August.

OXALIS

Nat. Ord. Geraniaceæ

The name "oxalis" is derived from *orys*, meaning acid. The leaves and flower stems have an acid taste.

The *Oxalis floribunda* was introduced from Brazil in 1829, while *Oxalis bowiei* is from the Cape of Good Hope and was introduced in 1824.

All of the species now under cultivation have come from either Cape of Good Hope or South America.

The oxalis is an attractive pot or basket plant, flowering from midwinter until spring. Practically free from insects and disease, it is most desirable for home culture.

BULB CULTURE

The bulbs or tubers, according to the variety, should be placed in a cool, shady spot during the summer and given a complete rest. About October first, take the bulbs out and repot in a rich garden loam. They should bloom from the middle of December until the last of April. If a basket is used, line it with moss and fill it with very rich garden loam containing a large percentage of chopped decayed sod. Place four to five roots just below the surface and expose to the sun. Never allow drying out. The leaves turn yellow quickly if exposed to gas.

The *rosea* is a profuse bloomer; the flowers are a bright pink, borne in clusters of a dozen or more on long stems. The stems are erect, and the flowers star-shaped, the foliage a soft green and the nature of the leaf spreading. When used in a basket, it develops a drooping nature.

The *floribunda* is a most satisfactory variety. Add a little sand to the rich garden loam, and protect from any possible chill during the win-

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ter. Being a native of Brazil, it requires heat. There are two varieties of this species, one being a bright pink and the other pure white.

Of the bulbous species, bowiei is decidedly the most satisfactory. The flowers are a brilliant rose color and the plant blooms profusely during the winter months.

There are many varieties, both tender and hardy, that are now under cultivation, and all alike are of easy culture.

Give plenty of food, sunshine, and water, but never allow drought, gas or chill to check the growth.

CHAPTER XII

FLOWERING PLANTS FOR THE WINDOW GARDEN

GERANIUM (CRANE'S BILL)

Nat. Ord. Geraniaceæ

From the term *geranos*, a crane; referring to the beak-like torus, or projection beyond the seeds.

IN almost every farmhouse and in many of the city homes, the geranium is the favorite, because it succeeds in favorable and unfavorable conditions.

The geranium is propagated mostly by cuttings. If placed in clean sand, and even in soil, it will strike root in from two to three weeks. Do not transplant to a large pot at first, but make several shifts until a five- or six-inch pot is reached.

It grows best in a rich garden loam or soil

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from the compost heap. Keep the roots moist, and the more sunshine the better. Do not



FIG. 49.—ALPHONSE RICCARD
Bright scarlet, double. It is better to pick off the bloom until the plant is well shaped.

crowd the plant, for this will make it spindling and unsightly. It can stand sudden temperature changes, but from 65° to 70° in the daytime is best, and cooler in the evening, but never below 40° .

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An occasional spraying with tepid water will keep the foliage bright and green and prevent dust from lodging in the various parts of the leaf.



FIG. 50—BEAUTÉ POTEVINE
Salmon pink. A well shaped pot plant.

As soon as the bloom in a cluster begins to pass, pick off near the stem, and never allow seed to form.

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There are few insects or diseases that attack the geranium if it is kept vigorously growing.

There are over five hundred different gera-



FIG. 51.—A GOOD BLOOM BUT A POORLY SHAPED PLANT
Pot small and not sufficient food or sunlight.

niums now on the market, and it is difficult to advise anyone about varieties, as they are nearly all satisfactory. The following have been found a good assortment:

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Alphonse Riccard—bright scarlet, double.

Beauté Potevine—salmon pink, double.

La Favorite—pure white, double.

S. A. Nutt—rich crimson, double.

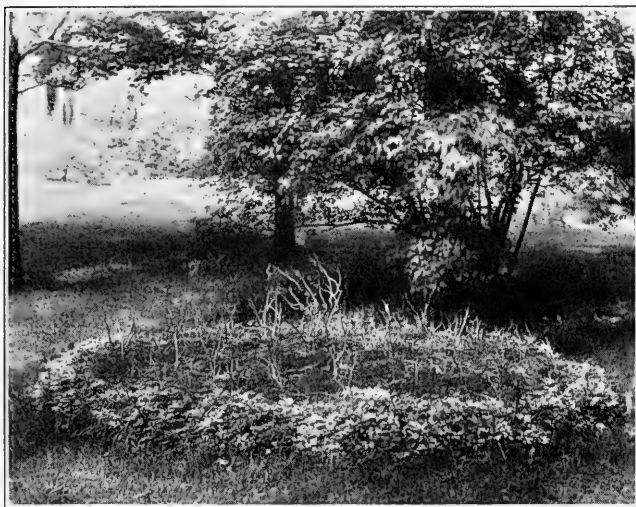


FIG. 52.—A BED OF GERANIUM PLANTED OUT AFTER STORING IN A CELLAR OVER THE WINTER

These plants were covered with a bright green foliage by the last of June and were in full flower by August first.

Mary Pelton—soft salmon, single.

Richelieu—scarlet orange and maroon, double.

Ivy-leaved geraniums are very satisfactory for hanging baskets or to tie to various-shaped supports. The flowers are delicate in color and a fair size. Achieve-

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ment—salmon rose. Leopard—pink, blotched with carmine, very satisfactory.

Scented-leaf varieties—foliage sometimes used to flavor apple jelly, the leaf being placed on the top of the jar or in the jelly. There are three favorite varieties: nutmeg; rose; apple. Flowers small but foliage scented.

Variegated varieties. Happy Thought is one of the oldest. Foliage green with a yellowish-green blotch in the center of the leaf. Mme. Salleroi, a bushy and compact plant, dwarf in habit, propagated by breaking off crown shoots. The plant if well grown will cover the surface of the pot with a beautiful combination of green and white.

PELARGONIUM (LADY WASHINGTON)

Nat. Ord. Geraniaceæ

Pelargonium is taken from the word *pelargos*, a stork, referring to the beak-like formation of the seed pod, and is sometimes called stork's bill.

They are mostly natives of the Cape of Good Hope; a few occur in Australia, one in the Canary Islands and one in Asia Minor.

One of the *Pelargonium grandiflorum* was introduced into cultivation in 1794. One of the hybrids was called "Lady Washington," which gave the whole class this popular name.

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This variety of plants has the greatest combination of colors imaginable, and some have ruffled petals which add to the gorgeous appearance of the bloom.



FIG. 53.—LADY WASHINGTON

The plants should have a rest the latter part of the summer in a cool dry place for at least two months. Prune the branches back. Shake out the roots, also prune these a little and repot

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in a rich garden loam containing a little sand. Soil from a compost heap is most desirable. After the adventitious buds appear place in a light, cool room. Pinch back the branches so as to develop a well-shaped plant. After the desired shape is secured, expose the plant in a sunny window, and feed with liquid cow manure every two weeks. If in the home, a little pinch of nitrate of soda is satisfactory. After the petals start to fall from a cluster, remove the flower, so that seeds do not develop, and in this way more flowers are realized for your effort.

The Lady Washington should bloom from three to four months after rest.

The plant, like the common geranium, is propagated by cuttings.

Aphides or plant lice are a common pest. Make some thick suds of fish-oil soap in a wash-tub. Add a few teaspoonfuls of tobacco water (Black Leaf 40). Place both hands over the surface of the soil and submerge the entire plant in solution. Hold it there for several

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minutes. Rest and repeat the operation several times. Then rinse with clean water, spray after it has stood at least one-half hour.

Undressi—light rose, veined darker. Flowers all summer.

Grandiflora—large violet-blue flower.

FUCHSIA

Nat. Ord. Onagraceæ

With the exception of two species belonging to New Zealand the fuchsias are mostly found in their native homes in moist places in forests and on lofty mountains of Mexico and Chili.

A monk named Father Plumier, who was a noted botanist in the latter part of the seventeenth century, discovered this most interesting family of plants and named it after Leonard Fuchs, a celebrated German botanist.

This old-fashioned plant is one of the simplest for home culture.

It is propagated from cuttings placed in sand. In about two weeks shift into a small pot, when a fair root system should have developed.

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The soil should not be rich at first—a clean garden loam. Never allow the plant to get pot-bound, but shift until a five- or six-inch pot



FIG. 54.—TREE-SHAPED FUCHSIA. BLACK PRINCE

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or larger is reached. Then pot in three parts garden loam, containing sod finely chopped up, and one part well-decayed horse manure mixed with a little leaf mold. If a tree-shaped plant is desired pinch off all side shoots, leaving a main stem. After the trunk or stem reaches the desired height, pinch off the terminal bud, leaving four side buds to develop.

After these have reached two or three inches, pinch off each end bud and let the buds on each branch develop.

Continue this until a desired head is formed and then allow to develop flower buds. An application of liquid cow manure, very weak, about every two weeks after the branches are well started until the buds appear, will help the vigor of the plant and size of the bloom. The plant should always have heat, sufficient water, and plenty of air, but no draught. Extra water is required after flower buds appear.

Some varieties have been grown to a height of six feet.

The white fly is a common pest and is found

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on the under side of the leaves. A most satisfactory remedy is to spray with one tablespoonful of nicotine (Black Leaf 40) and a tablespoonful of lime sulphur solution added to four quarts of water. Spray directly to under side of leaves.

For summer blooming, store the plant in a cellar in October and decrease the water. Most of the leaves will drop. Late in January repot and shake out the old soil, remove some of the roots and about two-thirds of the branches by pruning. Supply water, sunlight and warmth.

For winter bloom, with such varieties as *Fuschia speciosa*, keep in a shady cool place in the summer, prune and repot in September. Flowers will appear the latter part of December.

Black Prince—carmine magenta, with violet corolla, fading to a soft pink. A most satisfactory single variety for tree culture.

Arabella—white tube and sepals, corolla rosy pink. A good single.

Speciosa—flesh-colored sepals, carmine corolla.

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Phenomenal—crimson tube and sepals, corolla a rich shade of violet. A desirable double.

CINERARIA

Nat. Ord. Compositæ

The cineraria is a most ornamental and useful plant for winter blooming.

For home use it is advisable to secure the



FIG. 55.—THE CINERARIA

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young plants from a florist, the seed having been put in about March first to April fifteenth. The amateur may desire to try to develop these plants from seed. To do this, make a flat box about two inches in depth; every six inches bore a half-inch hole in the bottom. Cover with shallow sod inverted and then sift on clean garden loam to one-half inch of the edge, smooth and scatter the seed broadcast, cover with fine sand to three times the diameter of the seed, press and cover the box with glass. Great care should be taken in watering.

After the plants are about one inch high transplant them into small pots. By the middle of October they should be in six-inch pots. Use a rich garden loam with a little decayed manure at the bottom of the pot. As soon as the plant becomes somewhat pot-bound it will develop a flower. When this appears give the plant a little liquid cow manure water, or a small pinch of nitrate of soda in a glass of water, and apply every week until in full

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bloom. Give a moderate amount of sunshine and water when necessary, never allowing the leaves to wilt.

It is better to develop new plants every season rather than to attempt to carry them over.

The cineraria is often a failure in home culture on account of plant lice and a careful look on the under side of the leaves will aid in guarding against this insect. When the pest first appears place both hands over the soil in order not to disturb the roots and invert and dip the entire plant in a bucket of nicotine solution—(forty per cent. nicotine) about three tablespoonfuls to an ordinary bucket. Be careful not to injure the buds. Hold the plant in the solution for ten minutes. Allow it to dry and examine it to see if the insects are dead. If not repeat the treatment until results are realized. Another treatment is to dust thoroughly with tobacco and after it stands half a day wash the leaves off under the faucet.

There are many colors described in most

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seedhouse catalogs. The most satisfactory varieties for home use are:

Stillata Hybrida—vigorous habit and handsome flower.

James' Giant Strand—very tall and graceful.

Grandiflora Prize—medium tall; a fine decorative plant.

SPIREA (ASTILBE)

Nat. Ord. Rosaceæ

The *Spirea japonica* was introduced from Japan in 1865, and has since grown in favor as a pot plant. The name *Spirea* comes from the Greek *speiraia*, spiral, alluding to the flexible branches being suitable for twisting into garlands. There are many varieties, tender and hardy, on the market, all of which are most beautiful.

The *Astilbe japonica*, Japanese spirea, is growing in favor as a house plant because it is hardy and may be forced from year to year, giving a fine set of bloom each season.

The roots may be secured from the seedman or flower shop in November and should be potted in a rich garden loam, stored away in a cool cellar or cold frame for from three to five weeks, after which they may be brought into a

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temperature of 60° F. Give them a moderate amount of sunshine and the necessary amount of water. After the foliage is well grown ap-



FIG. 56.—JAPANESE SPIREA. ASTILBE, WHITE PEARL

ply a little weak liquid cow manure once a week until the flower appears, which will be in about ten to twelve weeks. Care must be taken after spraying the plant to keep it from the direct

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rays of the sun, which will burn the tips of the leaves if they are wet and exposed.

After the flower season is past and there is no danger of frost turn the pots on their side in a cool shady place in order to give the plant a rest. In the fall remove it to the cellar about the first of November or before the heavy frosts. It is best to repot this plant each season.

There are several very beautiful varieties on the market such as:

Ceres—delicate light rose-colored flower with peculiar silvery sheen.

Juno—strong grower, flower a deep violet rose color.

Vesta—plume-like, the flower of light lilac rose.

Salmon Queen—beautiful salmon pink.

White Pearl—silvery white flower.

Japonica—creamy white. This is one of the hardiest and a general favorite.

OLEANDER

Nat. Ord. Aspacynaceæ

Most of the oleanders or neriums are of continental origin. It derived its name from *Neras*, moist, referring to its native haunts. These beautiful plants, both leaf

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and flower, are poisonous when eaten. The branches have been used by campers for meat skewers with the bark peeled off. Even with this care the meat has been rendered fatally poisonous.

The oleander is an old-fashioned favorite of the home and conservatory because of its easy culture and handsome flowers which are either double or single, pink or white. They are easily propagated from cuttings taken from mature leading shoots of healthy growth, potted in sand or soil. They may also be potted in water, after which they may be transferred to the pot. Keep the soil moist after potting. The oleander may be trained in the shape of a tree with a large head or in a loose shrub form. The plant needs a complete rest, usually in midwinter. Place the pot or tub in a cellar, free from frost or gas, and withhold water. After a period of two months bring it into the light, prune back, and water freely.

The soil should be very rich.

Garden loam	1 part
Muck	1 part
Well rotted cow or horse manure	2 parts

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This should be well incorporated. Remember that the plant is a native of swampy places and therefore needs plenty of water, especially during the flowering season. If the soil becomes dry the flowers drop off.

Red spider is a common pest where the plant has been allowed to get a little dry or dusty. Spray with clean cold water, using great force. This will dislodge the spider.

Mealy bug and scale may be removed by sponging with fish-oil soap or fir-tree oil. Kerosene emulsion has also been recommended but the odor is not pleasant in the room.

Those having raised the oleander have never regretted their time or effort, as the plant has paid them well in bloom.

VIOLET

Nat. Ord. Violaceæ

Around both the blue and white violets are woven many myths and folk-tales. They are supposed to have originated in Greece, where they were fed to the priest-

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ess Io, who was changed into a white heifer in order to conceal her identity.

The flower has been known since antiquity and was at one time thought to have a curative value in checking the dreaded disease cancer. It has also been used as food.

Our cultivated varieties may have arisen from the *Viola odorata*, which is commonly found in Europe and Asia.

The violet may be successfully grown in window boxes about six inches in depth. The plants should have free space in which to grow with a clean cool air drainage. The box should have a number of drainage holes in the bottom. Cover these with crock and fill in about an inch of well-decayed cow manure and the remainder of the box with two parts garden loam, containing considerable sod, and two parts of moderately heavy clay. A little sifted sheep manure is not objectionable and also a very little sand. The soil should never pack or puddle and should be loose enough to give free drainage. If it is possible leave the soil out over one winter so that the frost may work on it. In

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this case mix considerable bone meal through the compost. Where one part of decayed horse manure or cow manure is used it should be pulverized and mixed thoroughly, and the compost turned over three or four times during the summer.

Strong plants may be secured in the fall from the florist and should be planted six inches apart. The plant can stand considerable sun but cannot stand drought. Water should be applied when necessary but the plant should not be wet overnight. Spray in the morning on clear, bright days with force and this will subdue the red spider. The plant does best in a cool room where considerable ventilation is possible. The flower should be picked early in the morning and late in the afternoon, and seed should never be allowed to develop.

In the spring the crown should be divided and the young plants developed in a cool place; use only the young healthy growths. Leave out in the garden as late as possible in the fall. A very light frost will not injure the plants.

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It is not a bad idea to keep loose tobacco stems scattered between the plants to check the green fly and the brown aphides.

The most common disease is the spot, which disfigures the leaf. Pick off all diseased leaves and burn, decrease the spraying and try to get the foliage in a healthy condition by keeping the plant and air dry and cool. There are many diseases and insects that attack the violet and the amateur should acquaint himself with these if the work is to take on a commercial character.

The violet is a beautiful flower and should be grown whenever proper care or culture may be given.

The following varieties may be grown in pot or box:

Single:

Russian Violet—soft blue, free bloomer.

Governor Herrick—soft blue, tinted with rose, very free bloomer, and a most desirable variety for winter culture.

Princess of Wales—the best commercial variety and most satisfactory for pot culture, rich violet color.

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Double:

Neapolitan—a lavender-blue, very good.

Marie Louise—the best double, strong plant and a free bloomer. The foliage is a dark green and the flower a lavender-blue.

GLOXINIA

Nat. Ord. Gesneriaceæ

Most of the species of gloxinia come from damp, shaded places of South America, while a few are found on high mountain elevations. The plant was first introduced in 1739 and was named after P. B. Gloxin, a botanist of Colmar.

The gloxinia is not only a favorite summer plant because of its brilliant bloom but also because of its velvety leaves of richest green.

Large bulbs may be secured from the florist in the fall and should be planted in five- or six-inch pots, the soil consisting of two parts light garden loam with considerable decayed sod mixed in, one part well-rotted leaf mold, one-half part fine sheep manure or shredded cow manure and one-half part cocoa fiber. It

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should always be rich and porous. The plant reaches perfection if put in a warm, moist atmosphere in a partly shaded place. After the flower buds appear, put in a cooler room in a



FIG. 57.—A BEAUTIFUL GLOXINIA

Note the velvet appearance of the leaves and the number of buds in all stages of development.

shaded window, and let the buds develop slowly. The flowers will be larger and will last longer.

The plant should receive a liberal amount

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of water after the leaves are well grown and the flower buds are formed. To insure the greatest success after the plant is well grown give an application of weak liquid cow manure every week. The flowers will usually be larger and the leaves a darker green. The seed pods should always be pinched off as soon as they appear, so as to throw the strength of the plant into the production of bloom instead of seed. If after several months of flowering the blooms become small, this is a signal to decrease the water gradually and let the bulb have a rest. The bulbs should be kept free from frost, packed in sand, or they may be stored in a cool cellar in pots. Water the plant just enough to keep the bulb plump. Should it have a shriveled appearance on removing from storage, pack for several days in moist moss.

The gloxinia may be propagated from seed in the same manner recommended for the propagation of the begonia, with the exception of placing damp moss over the surface of the

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soil until the seeds germinate. They are extremely small and should be handled with great care. For general home culture it is



FIG. 58.—THE GLOXINIA
A, leaf cutting; B, four weeks later.

best to secure a well-developed bulb from the florist.

Leaf cuttings are common; they root quickly in clean sand and will in two seasons develop

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into very desirable plants. Break off the leaf at the main stem and plant the leaf stem and half the leaf in sand, firmly fitting it into position (Fig. 58). After four weeks place in a small pot, and put in a warm shady place to develop.

The foliage is thick and covered with a velvet coat. Never sprinkle it with water and always protect it from dust. Care should be exercised in handling the plant, as it is weak at the surface of the pot, and there is danger of its breaking at this point if handled roughly. The leaves are also brittle and should never be bent, the foliage being most desirable for the brilliant bloom.

There are many varieties on the market, the bulbs usually ready for shipment in the fall. The following are very satisfactory and beautiful:

Waterloo—deep purple.

Meteor—carmine, edged white.

Graf Zeppelin—carmine fringed.

Nixe—white, bordered blue.

Marienthaler Kind—deep crimson.

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There are many other handsome colors, and no flower of summer blooming is any more desirable than the gloxinia. It is easily grown if given the proper culture.

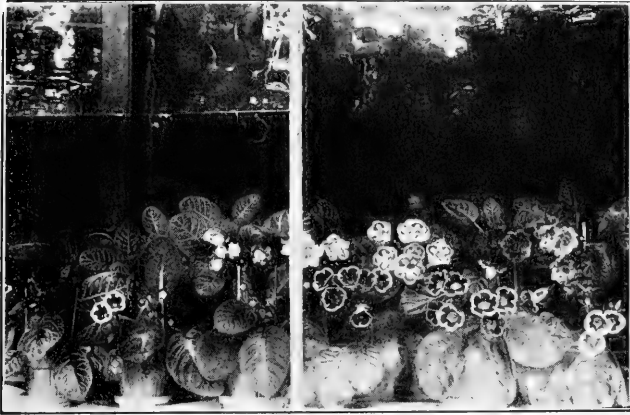


FIG. 59.—AN AMATEUR'S WINDOW OF GLOXINIAS

ABUTILON

Nat. Ord. Malvaceæ

The abutilon, which is an Arabic name for a plant like a mallow, has several other names: Chinese bell flower, flowering maple, golden bell. It is one of the free growers and free bloomers during the winter months.

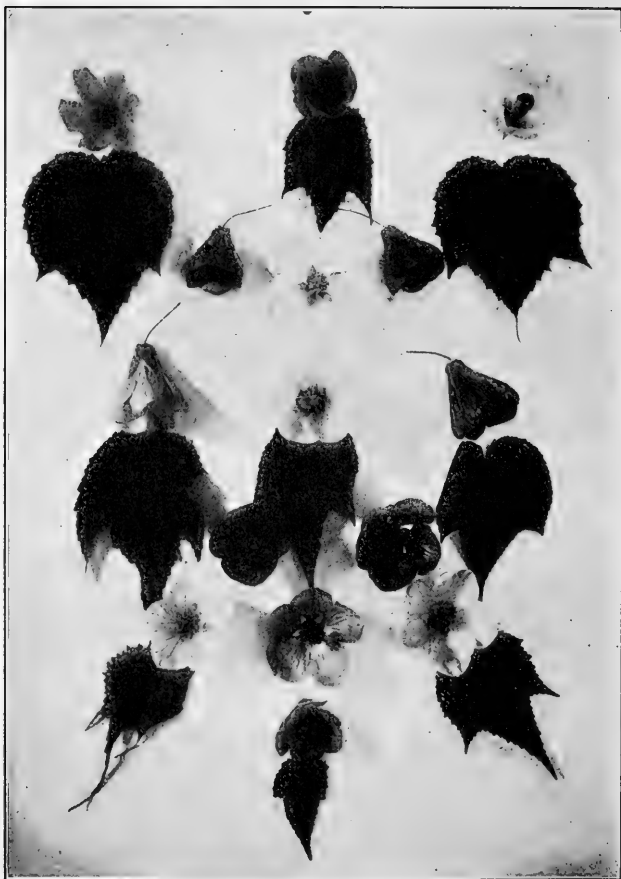


FIG. 60.—ABUTILONS ORIGINATED BY ANSON WHEELER, MORRISVILLE, N. Y.

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A well-grown specimen is a delight to one caring for the window garden and a pleasure to the passer-by. It is mostly propagated from

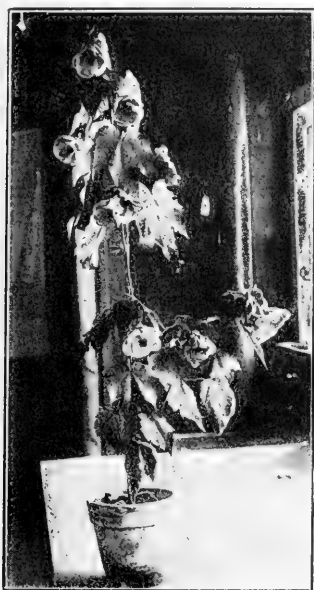


FIG. 61.—THE ABUTILON OR FLOWERING MAPLE

cuttings and the process of pinching back the branches to shape the plant should begin early. Cuttings should be made of young, vigorous wood, started during the summer for winter

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bloom. Old plants may be kept over the summer by giving them a rest in a cool shady place, decreasing the watering and plunging the pot in the soil up to the rim. Repot in a rich sandy loam early in September for winter bloom.

The plant is subject to injury from frost, and should it be desired for summer blooming, store it in the cellar during winter and plant out in the spring.

The green fly and the white fly may be controlled by spraying with a solution of nicotine. Dusting with tobacco will also control the green fly.

There are many varieties, named and unnamed, and this flower is one of the most satisfactory for amateur breeders to experiment with. The plants are easily propagated from seed.

Abutilon Thompsonii—a very fine, free blooming, variegated-leaved variety. Strong grower and easy to raise. Flower—yellow.

Golden Fleece—yellow, green foliage.

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Boule de Neige—white, not a strong grower.

Nevillarium—trailing. Fine for hanging baskets.

Savitzii—variegated foliage, vigorous grower.

King of Roses—pink.

HIBISCUS

Nat. Ord. Malvaceæ

Hibiscus is the name given by Virgil to the marsh mallow, and this extensive genus consists of both annuals and perennials.

The okra found in our vegetable gardens is an annual from Central America and the West Indies and is a relative of the beautiful hibiscus which is now commonly grown as a house plant and in our shrub beds.

The hibiscus, though not as well known as some plants for home culture, is fast becoming a favorite because of the glorious blooms. The flower is large and handsome and while void of fragrance this lack is made up in the brilliant and showy blossoms, gracefully situated on short stems among the dark glossy green leaves.

The soil should consist of two parts garden loam, one part leaf mold, well decayed, one

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part rotted cow manure and one-half part sharp sand. A few chunks of charcoal should



FIG. 62.—BOSTON FERN AND HIBISCUS IN COMBINATION WITH OTHER PLANTS

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be placed at the bottom of the pot or tub to insure drainage, which is of the greatest importance to the successful culture of this plant. During the growing season the soil should be kept moist with an occasional application of very weak cow manure water. If the soil should become parched when the plant is in bloom both flowers and buds will drop off.

If the plant is to bloom during the winter give it a rest in a cool shady place, withholding all water and allowing the soil to dry out thoroughly. Repot in September and transfer to a warm place, prune back and give an adequate supply of water. If the plant is to be grown to decorate the porch or veranda during the spring or summer, store in a dry cellar free from gas and protected from frosts.

The seed pods should be picked off as soon as the bloom passes so that the strength of the plant will not go to develop seed instead of flower. It may be propagated from cuttings made of matured new wood, planted firmly in clean sand, or from seeds.

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The red spiders are common visitors and should be dislodged by a vigorous spraying with water.

The mealy bug is controlled by spraying with whale-oil soap.

Good varieties are:

Rosa Sinensis Pleno—a large double flower, scarlet, yellow and buff. This species is easily affected by frost.

Coccineus and *Splendens* are also very satisfactory bloomers.

There are about a hundred and fifty species now grown, some wild, many perennials and a few annuals. Wherever these choice plants have been introduced to window culture they have been a source of pleasure and attraction.

PETUNIA

Nat. Ord. Solanaceæ

The petunias though coming from a tropical country, all being natives of South America, are among the favorite hardy annuals.

The petunia derived its name from the Brazilian name *petun*, meaning tobacco, to which the plant is allied.

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The petunia is best propagated from seed sown in a flat filled with clean garden loam. Sow the seed broadcast in March and cover



FIG. 63.—DOUBLE PETUNIA

with sand to three times the diameter of the seed. Press down with a tamper and water. Cover the flat with glass and put in a shady warm place. After the plants appear, remove

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the glass and bring the flat to the light. After the seedlings are three-fourths of an inch in height thin out into thumb pots; shift to larger pots every three or four weeks until the plants are a good size and shape for the final planting. Seed sown in March should bring plants in full bloom by June. If plants are desired in the winter, make cuttings of soft wood similar to those of the geranium, removing all buds as they appear until the plant has reached a desired size, when it may be allowed to bloom.

If the aphid or white fly attacks it during the winter, submerge in a solution of fish-oil soap and nicotine.

Single varieties:

California Giants—very large, various colors.

Ruffled Giants—immense flower, exquisitely ruffled and frilled.

Undine—azure-blue with lilac margin.

Adonis—rosy carmine with white throat.

Rosy Morn—dwarf, brilliant rose, excellent for pot culture.

Double varieties:

The double fringed varieties, both domestic and imported, may be secured from any reliable seedsman.

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PRIMROSE OR PRIMULA

Nat. Ord. Primulaceæ

The *Prumula auricula* is a native of the Alps and was first introduced in 1596 and called the mountain, or French, cowslip. It blooms very early and so the name primrose or primula from *primus*, the first.

Many of the new and most beautiful varieties come from the Himalayas, China and Japan.

We have a native variety from the Rocky Mountains, the flowers purple and yellow but of no value to the florist.

When Paralisos, the beautiful son of Flors and Priapus, lost his sweetheart his life became shadowed with sorrow. Heartbroken he died and the gods changed this lover into the primrose.

This flower of individual beauty and delicate fragrance is a favorite among flower lovers because it blooms most of the winter.

It may be propagated from seed sown in the spring, grown slowly during the summer, and finally shifted into a five- or six-inch pot in the fall for winter blooming.

One of the best methods of propagation is to divide the roots and crown of the old plant

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into individual plants. The soil should be fine, rich and loose. Transplant, making a succession of shifts during the summer.

This plant demands a great supply of water



FIG. 64.—PRIMULA OBCONICA

during the season of growth. Remove the flower as soon as the clusters fade so as not to develop seed. If the mealy bug is found among the leaves remove it with a brush dipped

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in a soap insecticide. Protect the foliage while sweeping the room and on warm dry days spray with clean water.

The original variety, *obconica*, was introduced into cultivation from central China in 1882. Since then many new varieties have been introduced.

The only objection to this plant is that the leaves have unfortunate poisonous properties, similar to those of the poison ivy. Few people are subject to its poisoning effects.

Varieties:

Primula obconica gigantea:

Lilacina—pale lilac.

Rosea—pink.

Kermecina—crimson.

Alba—white.

Primula obconica grandiflora:

Compacta—dwarf, large rosy lilac flowers.

Fimbriata—flowers fringed, mixed colors.

Vesuvius—deep crimson.

Crispa—flowers curled, apple-blossom pink to rose.

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CHINESE PRIMROSE

It is generally conceded by the lovers of the primrose that the Chinese primrose is more beautiful in both foliage flower and color than the *Primula obconica*.

Some of the varieties are double, some smooth petals, while others are fringed or crisped in the most exquisite manner. The foliage has a velvet appearance, some reddish-green, while others are a soft light green.

The seed should be sown in flats by March fifteenth, covered to three times their diameter with clean sand and shaded until seeds germinate. Great care should be taken not to allow a green mold or scum to form on the surface of the sand or soil, for this will cause the disease known as "damping off," which in time causes the plant to topple over and die. Should this occur, it is well to dust the plant with dry road dust, decrease the water and increase the sunshine and air.

Transplant into small pots while young, in

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rich light soil. Do not allow the water to puddle near the stem; better have the soil high at the crown, slanting to the side of the pot. Be careful in repotting not to cover the crown or heart of the plant, but have the young plant firmly established in the center of the pot.

The plant develops in a cool room but it cannot withstand frost, draught or gas. Protect the foliage from dust and do not sprinkle with water.

It is never advisable to carry the plant through a second season. The plant puts most of its vitality into the winter bloom and is worn out by spring and the flowers that might follow are inferior and the foliage sickly looking.

Young plants may be secured from the florist during April for a few cents apiece and this is found to be the most satisfactory.

Never allow the plant to stand in the intense sun during the summer but always in a shady cool place.

There are many varieties to select from, but

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the following are very satisfactory and beautiful:

Duchess—large white with zone of rosy carmine, yellow eye.

Kermesina Splendens—crimson.

Rosy Morn—delicate pink.

Stellata (Sutton's)—very fine for pot plants, colors mixed.

Halborn Blue—a beautiful shade of blue.

Chiswick Red—brilliant red.

Fern-leaved—mixed colors with beautiful fern-shaped leaves.

HELIOTROPE

Nat. Ord. Boraginaceæ

The heliotrope was introduced to cultivation in 1757 from Peru. It derived its name from *helios*, the sun, and *trope*, turning, in reference to the curled or twining flower branches.

The heliotrope is one of the most fragrant of all house plants, a free bloomer and very easily grown.

If a standard plant is desired, start from a cutting, pinching off each flower bud as it ap-

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pears, allowing only leaf buds to develop. This may be done until the main stem is five or six feet high, all side branches being carefully removed. This one straight stem should be



FIG. 65.—A FINE SPECIMEN OF HELIOTROPE

supported and at the head allow four or five branches to develop, pinching the ends of these now and then until a large ball one foot and a half or more in diameter has developed, then allow the flower to form. The bushy plant is

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the favorite, the standard being too stiff, yet beautiful.

The soil should be a rich garden loam, containing well-decayed horse, cow or sheep manure and a little sand. Fine roots are developed and form a mass on the inner surface of the pot. Repot often until a large pot is reached, eight to ten inches. The plant thrives on a thin solution of liquid cow manure given every week after the plant is well grown. Never allow the soil to get dry but keep the roots always moist. If the leaves curl and turn yellow and brown, the plant may be pot-bound, lack food or moisture. Gas will also defoliate the plant very quickly. After the flower passes, pinch off. Do not allow seed to form.

Peruvianum—light-blue flower, free bloomer, delicious fragrance.

Lemoine's Giant produces a profusion of flowers, nearly double the size of the old varieties. Various colors from light-blue to dark.

Regal is of dwarf, compact growth; immense flowers, all shades.

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MARGUERITE

Nat. Ord. Compositæ

The marguerite is seldom found in our window gardens, a fact to be regretted, for it is



FIG. 66.—THE MARGUERITE

one of our most satisfactory free-blooming plants.

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They are easily rooted from cuttings placed in sand or soil, should be shifted to small pots as soon as the roots are well formed, or in about eighteen days. The plant should be transplanted from time to time into a succession of larger pots, because if pot-bound for only a short time the flower buds will appear. It should be finally established in a six- to eight-inch pot, depending on the size and nature of its growth. Allow the plant to develop a stem eight inches in length, pinch back to six inches and allow four or five side shoots to develop. Keep pinching back and shaping the plant until it is bushy and well formed. Plants properly pruned and cared for reach a height of from three to five feet and four to five feet across.

The soil should be moderately rich with a little sharp sand sifted through it. The marguerite consumes a surprising amount of water, which should be liberally supplied. After about half the desired height is reached an application of liquid cow manure, very weak, fol-

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lowed by a good supply of water, will beautify the foliage as well as insure a stocky growth.

If flower buds are desired, decrease the water supply a little and allow the plant to become pot-bound. As soon as flower buds appear increase the water supply as well as the food supply of manure water. Care must be taken not to overdo this treatment. All flowers, as soon as the petals begin to wilt, should be picked off so that seed is not developed. Syringe often, especially on bright days, and should the aphid appear on the soft shoots and flower buds dust with tobacco powder or spray with Black Leaf 40.

After the flowering season has passed, cut back and plant out of doors. A new crop of flowers is produced late in the summer. Cuttings may be made in the fall and removed to the house before frost.

The marguerite is a most desirable plant for Easter. Cuttings should be developed in November and the plant raised in a moderate temperature.

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This beautiful forerunner of the common field daisy awakens memories of childhood, as the beautiful star-shaped bloom appears before the warmth of early spring has driven away the snows. It is always an object of admiration and pleasure to the grower.

CARNATION

Nat. Ord. Caryophyllaceæ

The original name for the carnation was *Dianthus* from *dias*, wine, and *anthos*, a flower, in reference to the fragrance and the unrivaled neatness of the flower.

In the early days of our country the old people used the old-fashioned pink to season their dishes and to flavor their wines.

The old type of grass pink is still a favorite in the Colonial gardens and is often sold as a pot plant in June.

The carnation is not only valued for its beauty and fragrance as a pot plant but also for its lasting quality as a cut flower.

The plant is propagated from cuttings taken from the leaf shoot in January planted in clean sharp sand packed tightly. The cuttings

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should be shaded for several days and after three weeks removed to a small pot. When the plant reaches a height of four inches pinch it



FIG. 67.—POT-GROWN CARNATION

back and allow three to five shoots to develop. Make a succession of shifts until a four-inch pot is reached and as soon as frost is past, remove it from the pot, plant in the garden, cultivate and keep the flower buds pinched off

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during the summer. The latter part of August the plant should be bushy and potted in a rich soil, having as much of the soil adhere to the roots as possible on removing the plant from the field so that it will not have a shock or setback in its new home. The plant should then be placed in a sunny window and given considerable water. Never allow the old flowers to remain on the plant, and should cut flowers be desired take them in the evening or very early before the sun is well up.

Spray on bright days with a syringe, using all the force possible. This will keep the plant free from red spider. Aphides may be controlled by dipping the plant in a solution of Black Leaf 40.

If the leaf or stem produces a rusty powder in pustules, unevenly distributed but parallel with the veins, the plant is affected with carnation rust (*Uromyces caryophyllinus*). The cuttings should be taken from healthy, vigorous plants. Pick off all diseased parts and burn them. Spray once a week with four

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ounces of copper sulphate to five gallons of water. Stop spraying the plant with clear water until the disease is checked.

It is advisable to shift the carnations to a new spot in the garden each year to prevent stem rot.

The plant develops to perfection in a cool temperature but should always be protected from frosts.

There are many varieties of superb beauty and exquisite fragrance, but the following are most generally cultivated in pot or bench:

Beacon—best scarlet, a free bloomer.

Benora—variegated, color cream white, beautifully penciled with bright red.

Enchantress Supreme—a light salmon pink.

Enchantress—shell-pink; one of the most beautiful carnations grown.

White Enchantress and White Perfection are satisfactory.

White Wonder—a very free bloomer and grower; flower large and worth consideration.

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HYDRANGEA

Nat. Ord. Saxifragaceæ

This beautiful flowering shrub has been named after the cup form of the capsule or seed vessel. It was introduced into England from China in 1790. Some of the later varieties came from Japan.



FIG. 68.—HYDRANGEA OTASKA GROWN IN A WINDOW GARDEN

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The beautiful tresses of the hydrangea add to the elegance of the window garden and especially with those who have room to develop the plant as it should be.

Cuttings should be taken late in the summer—August—from strong young shoots. Root in the sand and pot into rich earth, containing a little sand and shredded sod well decayed. Keep growing in a cool place, increasing the pot room from time to time and giving applications of weak liquid cow manure every two or three weeks. In December these plants may be brought into a warm room, allowed to stand in the direct rays of the sun, and the supply of water increased. The bloom will appear early in the spring. Old plants should have a rest during the summer, the pots plunged in the earth up to the rim in a shady cool place. Prune and repot the plant in the fall.

Sprinkle in the morning every two or three weeks during the winter with water having the chill taken off. Never allow the foliage to remain wet overnight. If the foliage turns

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yellowish between the veins add a little nitrate of soda to the soil and water freely. Plants will turn sickly if allowed to stand in a vessel partly filled with water. After the bloom appears keep in a cool place and the flower will last much longer.

The best varieties for pot culture are:

Hortensis—a soft bluish pink. In clay soil the flower is a deep blue.

Otaska—rich pink, a strong desirable variety for home culture.

TUBEROUS BEGONIAS

Nat. Ord. Begoniaceæ

The tubers should be kept warm and dry during the winter, packed in sand. Pot in five- or six-inch pots in soil similar to that used for the begonia rex about the middle of March. After growth has well started increase the application of water, keeping the soil moist but never wet. A fine bloom should appear about June first.

Good varieties are:

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Vernon—dwarf plant, bright red flower.

Enfordi—one of the same habit as the Vernon, but having bright pink flowers which almost hide the foliage during flowering season.

Crispa—variety of colors with the flower petals exquisitely filled and crested.



FIG. 69.—TUBEROUS ROOT BEGONIAS

There are many other varieties that are desirable and satisfactory and may be secured from the florist or seedsman.

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PLUMBAGO

Nat. Ord. Plumbaginaceæ

The plumbago or leadwort is a native of Europe, Asia and Africa. It is said that the plumbuni (lead) is a cure to some of the poisonous lead diseases.

This beautiful plant is seen more in the conservatory than on the window sill, though it may be grown successfully in the window garden.

The plant is propagated from cuttings, rooting easily and growing rapidly. Young plants also are secured from root cuttings and from divisions. It grows vigorously in a rich garden loam, and should be fed during the eight or nine months of bloom with liquid cow manure. This will insure continual flowering.

The plant grows straggling if it is not cut back. The graceful swaying branches with the beautiful loose clusters of pale lavender bloom are a most desirable table decoration in

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bouquets alone or in combination with certain other flowers.

Keep it cut back and new growths will appear and the plant will keep in a healthy condition. It requires considerable water and sunshine during the flowering season.

There are three principal varieties:

Capensis—a beautiful lavender blue.

Rosea—a rose-colored flower.

Alba—a white flower.

The Capensis has been found the most satisfactory bloomer, flowering at least eight months, from the first of September until April.

AZALEA

Nat. Ord. Ericaceæ

The azalea which is raised mostly in greenhouses and conservatories was introduced from Turkey and China, though many of the choice varieties have been originated in Ghent, Belgium.

The habitation of the plant is in dry places from which it has derived its name, *azaleos*, dry. Since its introduction into cultivation it has become one of the best commercial flowering plants.

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A mysterious voice whispers a sense of wonder or satisfaction to my heart on entering a flower shop in azalea time. These gorgeous flowering plants are seldom cultivated by amateurs, and this is truly a pity, for they may be successfully grown if given the right treatment.

First, and all-important, secure a healthy plant from the florist. If in full bloom they are rather expensive, but after the bloom has fallen the plants may be secured very reasonably. Pinch off all the seed pods first and prune back any uneven growth if the head is to be even. Personally I prefer the uneven head, because it is more graceful and here and there a bloom appears where one was not expected, but this is a matter of taste.

After the flowering season the annual period of growth begins, and care should be taken not to neglect the plant at this time. The plant should be kept in a cool, well-lighted room and the leaf buds allowed to develop, for it is at this period that strength is stored up for the

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following season's bloom. It is well at this period to repot into an azalea pot ranging in size from five inches wide, four and one-half inches in height, to ten inches wide and eight inches high. Remove the ball with a pointed stick, tease away the crockery and pick loose the roots on the outside before placing in the larger pot.

The soil should consist of two parts peat soil, one part sand, one part decayed leaf mold and one-half part garden loam. The soil should be well incorporated and with a flat stick packed about the ball, which is placed in the center of the pot. A few pieces of charcoal at the bottom will insure drainage, which is of greatest importance, because the plant succumbs to too much water quicker than it will to drought.

During the summer the plant should be placed out-of-doors in a cool, partly shaded place, the pot plunged in muck soil or leaf mold. It should have frequent spraying with clear water and never be neglected. The early

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morning sun is best for the development of the young growth, but the hot noonday sun seems to stunt the growth. Do not overwater, but never allow the plant to get very dry. An application of liquid cow manure at various times will aid in the growth of the new wood and eventually in the number and size of the flowers.

The plant is removed to the house before the frosts and should be syringed every day, so that the wood may be moist and loose and the buds allowed to form without too much loss of energy to the plant. Dry conditions seem to stiffen the growth and decrease the size of the flower.

After the flower buds are well grown keep the plant from the direct sun. The flowers will have a richer color and will last longer. During the flowering season slightly increase the watering but do not soak the soil, for too much water will quickly decay the fine roots and the flowers will drop before their time. The red spider is a common pest especially during the

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summer. Continual syringing with strong force will keep the plant clean. The mealy bug is also a common visitor and should be removed by submerging the head of the plant in suds of fish-oil soap or fir-tree oil.

The plant sickens in a warm atmosphere, and especially where the air is not fresh. The azalea, while not so particular as the rose, requires a great deal of care and attention, but the grower is more than paid for his efforts in the profusion of flowers. If the plant is forced, the following year will only see a few straggling flowers, but if properly rested the second year will see the plant recover itself.

The azalea demands sufficient water, no more, muck or peat soil, cool fresh air, a bath often, a little food and a shady place to grow in and above all the watchful eye of the grower.

There are many beautiful varieties and in selecting care should be taken as to time of bloom so as to have a succession of flowers for several weeks.

The following varieties are recommended:

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Hogarth—brilliant scarlet.

Alfred Neuner—double white.

Pres. Garfield—double red.

The plant lice are controlled by dusting with tobacco. Spraying during bright days and early in the morning will aid the growth of the plant as well as keep the red spider in check. If the amateur can insure proper care this delicate flower of individual beauty should have a fair trial in the window garden or conservatory.

LANTANA

Nat. Ord. Verbenaceæ

The lantana, which is the ancient name for viburnum, was introduced from the West Indies in 1682. There are many beautiful species found in Brazil.

The lantana is a very rapid grower as well as a constant bloomer, which places it in the first rank of house plants.

It will stand various changes of temperature and even neglect in watering, but it is best grown in three parts garden loam, one-half

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part decayed horse manure and one-half part sand, well mixed. It requires a great amount of sunshine and a moderate amount of water but never have the soil soggy. It is started from either cuttings or seed but preferably from cuttings made from vigorous growing shoots in March or April.

Old plants may be removed from the pot after all danger of frost is past and planted in the garden. In a short time after being pruned back the new shoots will send out a great profusion of clusters, the flowers on the outside of the cluster opening first, changing color slightly before the center bloom is completely opened, giving a very pleasing effect to the plant.

The lantana branches freely and it may be trained to either a tree or a shrub. Spray occasionally with fish-oil soap and after a couple of hours spray again with force, using clean water. This treatment will keep the plant practically free from insects.

CHAPTER XIII

ORNAMENTAL FOLIAGE PLANTS

BEGONIA

Nat. Ord. Begoniaceæ

M. Begon, a French botanist, was honored by having this plant named after him. The rex begonia is the most ornamental of all the foliage plants.

The tuberous-rooted varieties have been introduced from South American Andes and their beautiful clusters of large blooms and soft green foliage make them a favorite spring plant.

THIS house plant requires the simplest culture. When it is young do not place it in a large pot; the roots are small and the plant should have a succession of shifts from a three-inch to a six-inch pot the first year.

The soil should consist of

Light sandy loam.....	2 parts
Sharp sand	1 part

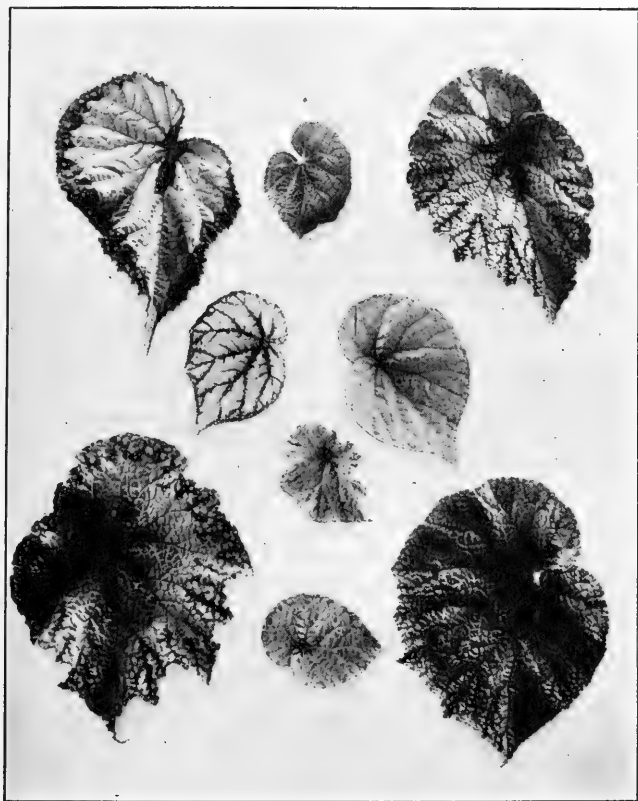


FIG. 70.—FANCY LEAF BEGONIAS ORIGINATED BY ANSON WHEELER,
MORRISVILLE, N. Y.

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Chopped cow manure that has been exposed to the weather for two months. $\frac{1}{2}$ part
Leaf mold well decayed. $\frac{1}{2}$ part

The mixture should be well incorporated. A few pieces of charcoal placed in the bottom of



FIG. 71.—REX BEGONIA

the pot will improve the drainage of the pot, which should be kept moist but never wet.

Cover the plant while sweeping and never

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sprinkle or shower the foliage. The begonia should never be put in direct sunlight or in a damp, poorly lighted room. The rex begonia does best in a temperature of about 65° to 80°.

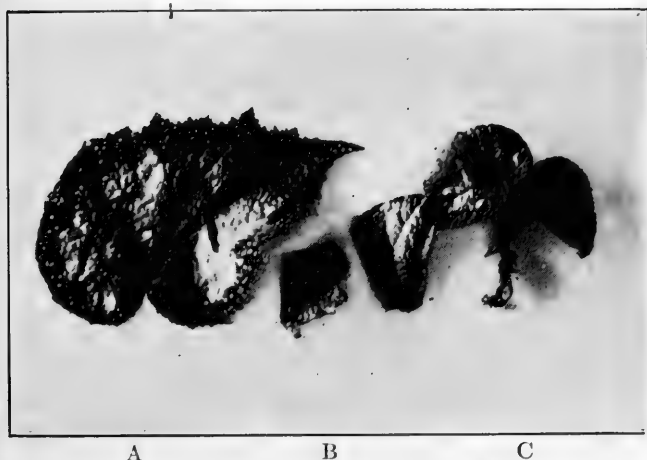


FIG. 72.—PROPAGATION OF THE REX BEGONIA

A, cuts across the vein of the rex begonia leaf. The bottom side should be fitted close to the sands. B, portions of the leaf placed in the sand will also develop young plants. C, a young begonia plant ready for potting.

The rex begonia is best propagated by leaf cuttings. The leaf should be cut as in Fig. 72, each piece being so cut as to form a junction of the rib at the lower end of the cutting, and placed in damp, warm sand. Protect it for a

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week or more with papers. The complete leaf may be placed bottom side down and sections of the veins cut (Fig. 72), the leaf held



FIG. 73.—*BEGONIA METALLICA*

tightly to the sand by toothpicks or hairpins. At each severed vein a young plant will appear. Remove carefully and place in small pots.

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The flowering begonia, such as the *metallica* or *argyrostygma*, is propagated by cuttings.



FIG. 74.—*BEGONIA ARGENTEA GUTTATA*

The one insect that is often found on the begonia is the mealy bug (*Pseudococcus*

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citriceoriae). Take a soft hairbrush, dip in a little very weak tobacco water and carefully brush off the insect. A dry brush



FIG. 75.—GLOIRE DE LORRAINE

will displace the insect, when it may be destroyed.

Do not allow the begonia to stand in a vessel partly filled with water, as the roots will decay and the leaves drop off. If you have made this

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mistake, repot and give the plant plenty of warm air.

The begonia rex and its hybrids are the best for foliage plants.



FIG. 76.—SILVER LEAF BEGONIA

Flowering begonias:

Gloire de Lorraine—beautiful rose pink, blooming from three to four months.

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Argentea guttata—foliage bronze-green, spotted with silver; flowers pearly flesh-color, borne in drooping panicles. Its upright habit and sturdy growth make it most satisfactory.

Metallica—foliage hairy with dark-red veins prominent above the bronze luster on the surface; flower white. A beautiful plant.

Manicata aurea variegata—foliage shining green blotched with cream and rose colors irregularly distributed over the larger waxy surface. A superb plant for the jardiniere.

ARAUCARIA (NORFOLK ISLAND PINE)

Nat. Ord. Coniferæ

This plant has derived its name from *Araucanos*. The *Araucaria imbricata* grows in Chili and the name *Araucaria* is used among the people of the *Araucanos* country.

The *Araucaria excelsia* is from the Norfolk Islands and sometimes reaches the height of two hundred feet.

This slow-growing, fern-like evergreen is very popular and easily grown if kept moist and out of draughts. The soil should consist of

Garden loam	2 parts
Decomposed leaf mold.....	1 part
Clean white sand.....	1/2 part
Shredded cow manure.....	1/2 part

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The soil should be packed firmly about the roots and the plant kept from draughts during



FIG. 77.—ARAUCARIA (NORFOLK ISLAND PINE)

the winter. The slightest chill will cause the needles to turn yellow and sickly and finally fall. Never allow the pot to become com-

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pletely dry or the plant to be exposed to intense light or heat.

It thrives best in a cool room or hall. If kept in a warm place the plant becomes infested with thrips and red spider. The first sign of these pests is detected on the lower tiers of the foliage. They become yellow and lose their leaves or needles.

To control these insects submerge the entire plant in suds of fish-oil soap. Invert the pot, holding in the soil by the hands. Swish the plant through the solution a number of times. Fir-tree oil is recommended, applied according to the directions given with each can.

Araucaria excelsa is a favorite but the *Araucaria robusta compacta* is a stronger grower and more compact.

DRACAENA

Nat. Ord. Liliaceæ

The dracaena derived its name from *Drakaina*, a female dragon; the thickened juice becomes a powder, like the dragon's blood.

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The oraco at Orotavia in the Island of Teneriffe has been estimated to be 6,000 years old and is a tree seventy feet high and seventy-nine feet in circumference at the base. The hollow center was used for centuries as a Roman Catholic chapel after the conquest of the island by the Spaniards.

Some of the ornamental varieties were introduced from Africa in 1872 while others came from the East and West Indies and Mauritius and a few from New Zealand.

It became of commercial value in 1820.

The dracaena is one of the most beautiful of our ornamental plants. Some of the varieties have a dark shiny green leaf, while others are variegated with white and creamy rose stripes. The foliage is tough and the plant practically free from disease and insects. The plant requires a liberal amount of pot room, a warm moist atmosphere and plenty of water. The soil should consist of three parts of rich compost and one part peat or muck soil. A little white sand is most desirable. A few bits of charcoal or rough material should be put at the bottom of the pot so as to insure drainage.

Sponge the foliage often with clean water

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and where possible syringe, but have the plant thoroughly dry each night and especially at the axes of the leaves, where they readily decay if kept wet. The plant should be placed where it may have considerable sun and when possible a free circulation of fresh air, but never a draught of cold, frosty air.

While the dracaena will withstand considerable rough usage, yet if treated kindly it will respond quickly with a glorious growth of foliage.

The pots should be plunged out-of-doors in the summer in a shady cool place, or the plant may be taken out of the pot and planted in the garden. See to it that a liberal supply of water is furnished and a frequent syringing during the hot summer months. Repot early in the fall and remove to the house.

There is a great choice of varieties but the following makes a fine collection:

Bronze Beauty—beautiful bronze foliage and very hardy.

Fragrans—broad green foliage.

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Massangeana—green striped with yellow.

Godsiffiana—rich green, spotted with creamy white, very handsome.

Sanderiana—beautiful green foliage, bordered with white, a most desirable variety for a center piece.

Terminalis—crimson foliage, striped with pink and white.

BOUVARDIA

Nat. Ord. Cinchonaceæ

The bouvardia was introduced from Mexico and named after Dr. Bouvard, the curator of the Botanic Gardens at Paris.

These beautiful evergreen shrubs are tender and subject to frosts. They are better suited to conservatory or greenhouse culture than to general house culture, often being a complete failure on account of careless treatment and uneven temperature. The soil should be light and sandy and fairly rich in manure.

The plants are best propagated by breaking the roots apart so that several eyes are left to develop the new plant. These should be planted in a rich garden loam where they may be frequently cultivated during the summer.

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The latter part of August pot and plunge up to the rim in soil, shading for several weeks until the plant is established in its new home. By the middle of September or before frosts remove to a sunny window or conservatory where the plant grows well in moist warm air. Keep the soil moist but never wet, and never allow the pot to stand in a vessel containing water.

The plant can assimilate a light supply of weak cow manure water about once a week after the last of October. The bloom should be at its height during the month of December.

The plant cannot stand gas or the slightest draught, but should have an even temperature which is usually only possible in a greenhouse or conservatory.

Young wood cuttings may be made in June and rooted in clean, sharp sand, but these are not as satisfactory as the root cuttings for general use.

There are many varieties recommended in catalogs, some of them having been originated

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in this country. The following are good for general culture:

Davisoni—white, free flowering.

Elegans—rich crimson.

ASPIDISTRA

Nat. Ord. Lilaceæ

The aspidistra was introduced in 1835 from China and Japan. The plant gets its name from the shape of the flower, *aspidision*, a little round shield. The flower has a waxy appearance and opens on the surface of the soil. It is not beautiful but very interesting.

The aspidistra has taken its place among the house plants because of its hardiness and beauty as a foliage plant.

It is propagated by removing the young plants that appear quite frequently over the surface of the soil. A long knife is used, inserted so as to remove with the young plant a little of the root. It thrives in soil composed of two parts rich garden loam, one part decayed leaf mold, one-half part sand and one-

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half part clay soil. While the plant can stand considerable abuse it should never be allowed to suffer from the lack of water.



FIG. 78.—*ASPIDISTRA ELATIOR VARIEGATA*

The plant does not need the direct sunlight, so may be placed in shady parts of the room and the water may be decreased during the winter. In summer plunge the pot in the soil

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in some shady place and keep moist. Remove to the house before frost.

The plant should have a sponge bath several times during the winter with fish-oil soap so as to remove all dust and keep the foliage shiny.

There are two varieties which are suited to house culture:

Aspidistra lurida—one of the toughest and suited for house and garden culture.

Aspidistra luridavariegata—the more common and a general favorite because of the beautiful foliage, which is a dark green, unevenly striped with cream-yellow and white.

AGAVE AMERICANA, ALOE, OR CENTURY PLANT

Nat. Ord. Amaryllidaceæ

The *Agave americana* was introduced from South America in 1640 and since then has increased in favor both as a conservatory plant and decoration in rock work, to embellish terrace walks, flights of steps or entrances to doorways.

The term *agavas*, admirable, refers to the stately form in which some of them flower.

HOUSE PLANTS

The fibers secured from the leaves of the century plant make the strongest rope. The juice, when the watery part is evaporated, forms a good soap, and will mix and form a lather with salt water as well as fresh. A very intoxicating drink is also made from the juice. The leaves after treatment make very good razor straps.



FIG. 79.—AN ORNAMENTAL ARRANGEMENT OF CENTURY PLANTS
(AMERICAN ALOE VARIEGATA)

The plant is propagated by removing the small plants which appear on the surface of the soil by cutting with a knife, leaving a few roots to each young plant. They should be grown in

CHAPTER XIV

RUBBER PLANT

FICUS. ELASTICA

Nat. Ord. Urticaceæ

THE rubber plant is decorative standing alone on a windowsill or in a combination with palms. Its thick, shiny foliage gives it a prominent place among the home-grown plants. It is also desirable as a general house plant because it can stand the effects of dust and dry air better than almost any other.

The plant often becomes unsightly after it has reached a height of four feet with several uneven branches at the top (Fig. 84) and a leafless trunk.

The rubber plant may be propagated by making a V-shaped cut in the branch, almost severing the upper part from the parent plant.

HOUSE PLANTS

(Fig. 85.) The cut should be made not less than one foot from the growing tip. Circle the wounded branch with about two inches of



FIG. 84.—THE RUBBER PLANT

An ungraceful plant. Three straight, attractive plants might be propagated from this specimen.

sphagnum moss and tie firmly, making sure that the moss fits tightly in the wound. Do not wipe away the white liquid oozing from the

RUBBER PLANT

wound. There is danger in injuring the wounded cells. Keep the moss moist, never al-

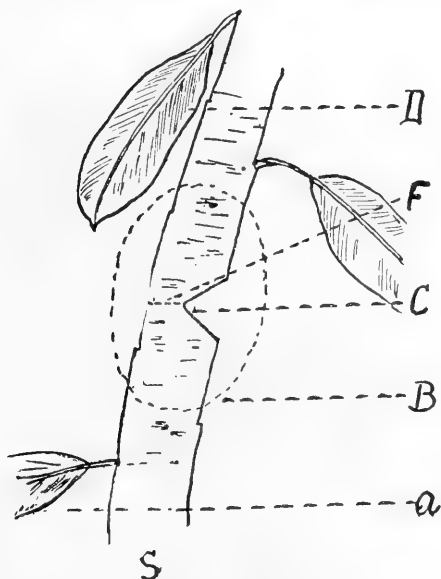


FIG. 85.—STEM OF A RUBBER PLANT WOUNDED TO MAKE A CUTTING
S, stem; A, lower leaves left, only remove leaves around the wound;
B, surface to be covered with sphagnum moss; C, V-shaped cut
in the branch; D, foliage above wound; F, where final cut is to
be made to sever young plant from parent after roots appear on
the surface of the moss.

lowing it to dry out. After a month or six weeks, white roots will appear. Now is the time to sever the growing plant from the par-

HOUSE PLANTS

ent. Cover the bleeding wounds with a little moist clay. Remove the lower leaves by cutting them off with a sharp knife. Pot this new



FIG. 86.—WOUNDED STEM BOUND IN SPHAGNUM MOSS

plant without removing the moss so as to prevent injury to the tender roots.

After placing a bit of broken crock over the drainage hole of a five- or six-inch pot, put in

RUBBER PLANT

an inch of clay loam—not stiff clay—mixed with a little well decayed horse manure. Place the plant in the center of the pot so that the moss does not appear above the surface, fill



FIG. 87.—PLACING CLAY OVER WOUND TO PREVENT BLEEDING.

with soil to within a half-inch of the upper edge of the rim and pack the soil firmly with a broad stick about the plant, being careful not to injure the tender roots. Remove the plant to a

HOUSE PLANTS

shady place until it becomes established in the soil and then bring it to light.

Give it plenty of water but do not allow water to remain in the vessel under the pot.



FIG. 88.—FINGER POINTING AT ROOT SHOWING THROUGH MOSS
Removing the moss would break the roots. Cut off lower leaves
and pot.

There are few insects or diseases that attack the rubber plant, but should any of the scale insects appear on the leaves wash them with

RUBBER PLANT

fish-oil soap, making some thick suds, and apply with a soft sponge. After applying the soap wash the leaves with clean water. This



FIG. 89.—YOUNG RUBBER PLANT
An attractive size for the home.

treatment will keep the foliage free of insects. Never use oil to make the leaves glossy, as this impairs the health of the plant.

If a brown, dried blotch appears on a leaf,

HOUSE PLANTS

examine the glass in the window and see if there is not a flaw in it. The concentration of rays on one part of the leaf causes these unsightly spots. The other varieties are:

Pandurata (Majestic Rubber Plant)—this variety has enormous leathery leaves.

Variiegata—broad markings of creamy white on a dark green ground. Not desirable for home culture.

Repens—creeping variety; fine for hanging baskets; small leaves.

CHAPTER XV

CHRYSANTHEMUM

Nat. Ord. Compositæ

These towsy-headed children of the plant family who refuse to comb their hair originated in China some two thousand years ago. It is called *kiku* in Japan, which symbolizes the sun, because of the beautiful balls of golden color that the yellow varieties form. It has been under cultivation in that country over seven hundred years.

Few people know that this magnificent flower in as many colors as the autumn leaves is related to the common daisy and the ox-eye daisy.

The derivation of the word chrysanthemum is from the Greek words *chrysos*, gold, and *anthemon*, a flower, referring to the yellow varieties, of which there are so many.

THIS favorite of all flowers in the autumn is easily grown in a sunny window if given proper care.

After the plants have stopped blooming

HOUSE PLANTS

store in a cool place and gradually decrease the watering but never allow the plant to dry out completely. Bring it to the light the first



FIG. 90.—THREE BEAUTIFUL PINK SINGLE STEM BLOOMS OF GLORY OF THE PACIFIC

of January and water freely. Suckers will appear around the crown of the old plant. After these young plants have reached a height of two to four inches, make cuttings, place in

CHRYSANTHEMUM

the sand tightly packed. Shade the cuttings for two weeks. By the first to the middle of February the roots will have developed sufficiently, then transfer to a two-inch pot filled with rich light garden loam. Make several changes until a six-inch pot is reached which should be by the latter part of August.

After the young plant has reached three to four inches in height, pinch off the terminal bud (Fig. 91), and develop branches. Continue to do this until the desired number of stems are realized. For home-grown plants three to four stems make a graceful plant.

Never allow the plant to become pot-bound. Plant in soil composed of the following:

Rich garden loam compost 3 parts

Shredded cow manure, decomposed . . . 1/2 part

Sheep manure 1/2 part

An addition of a little fine bone meal mixed in the soil for the final potting is most desirable.

While the plant is growing give two applications of water daily during the summer

HOUSE PLANTS

months, but only one during the latter part of August and September; at this time water in the morning only, so that the foliage may be dried off during the day.

A little weak liquid cow manure is most desirable every week after the plant is well grown but do not feed after the buds appear. Too much food makes the buds split and the foliage curl. With some varieties it is advisable to plunge the pots out-of-doors during the summer but always keep the soil moist and do not depend on Nature to do the watering. Checking the plant renders it susceptible to disease and the plant may fail to produce a perfect bloom.

If a single stem is desired remove all the shoots that might appear. The main stalk should always be supported. Many of the single-stem varieties are rooted in June. Disbudding will need attention early in September. There are two forms of buds, crown and terminal. The crown bud is formed first, leaf buds appear from the axes of the leaves. If

CHRYSANTHEMUM

the crown bud is not desired, and in many cases it is an imperfect monstrosity, it is best to pinch it back, allowing two or more of the



FIG. 91.—CHRYSANTHEMUM

Finger pointing to place where the terminal bud was pinched back causing three branches to develop.

vegetative shoots to develop. The terminal or last bud may be retained by disbudding all flower buds that appear around it or they may

HOUSE PLANTS

be allowed to develop, depending on the size of the flower desired by the grower.

If the plant should get dry during the summer it is subject to red spider. Spray in the morning on clear days with a strong spray of clear water.

Both the black and the green aphid attack the chrysanthemum. Apply as directed on packages, Nice-Fume, To-Bak-Ine, Kentucky tobacco dust, etc.

If brown discolorations appear between the veins on the under side of the leaf the plant is attacked by thrips. Spray on under side of leaves with Hammond's Thrip Juice No. 2. Mix the solution thoroughly—one part to forty parts of water—and apply with force. This is best applied in the evening.

Mealy bug may be dislodged with a brush. There are many other insects that trouble the chrysanthemum in commercial houses but are seldom troublesome in homes.

The one common disease is the leaf spot, *Septoria chrysanthemi*, also the *Puccinia chrys-*

CHRYSANTHEMUM

anthemi, both causing the leaves to curl and grow sickly.

When the disease appears remove affected leaves and burn; spray the plant with Bordeaux Mixture. Ask for solution containing

Copper sulphate	6 pounds
Quicklime	4 pounds
Water	40 gallons

Keep the foliage dry for several days after the spray has been applied. Do not get the spray on wallpaper or paint.

The chrysanthemum, if sufficiently fed, having good air drainage as well as soil drainage and sunshine, is one of the most satisfactory of the home-grown flowering plants.

There are many varieties on the market. The following may aid the amateur in a selection but it is always best for one to make his own selection, studying the habits of the plant, time for blooming, color and general culture.

Special new golden queen—yellow, matures October first.

Marigold—yellow, matures October fifteenth.

HOUSE PLANTS

Tekonsha—bronze, matures November twenty-first.

Standard varieties.

Early. Cuttings made in March; bloom in October.

Glory of Pacific—soft pink.

Golden Glow—yellow.

Ivory—white, dwarf.

Monrovia—yellow; easy to grow.

Mrs. B. E. Hayward—bright pink.

Polly Rose—pink.

Midseason. Cuttings made in May, blooms from November first to fifteenth.

Col. D. Appleton—yellow, very fine.

Mary E. Myer—pure white.

Yellow Eaton—yellow.

Patty—pink.

Late. Cuttings made in May and June bloom during November and later, according to culture.

Adonis—pink.

Chadwick supreme—yellow.

Haward—dark crimson.

Major Bonnafon—yellow.

CHAPTER XVI

ROSE

Nat. Ord. Rosaceæ

The name rose is derived from the Celtic *rhod*, red, the prevailing color of the flowers.

The early culture of the rose is lost in the shadows of antiquity. The Romans placed the rose over the principal door leading to the private feast, and anyone passing under it was bound by honor never to reveal anything said or done within the room, hence the term, *sub rosa*—under the rose.

Roses are grown in America, Europe, Asia, Africa and Australia, but not one of these countries has contributed a single species, while Siberia, Iceland, Greenland, and Kantschatka are fairly well represented. China, Persia, and India have furnished some of the finest species.

The history of the rose is so extensive that it is impossible to take it up here. The rose is found in myths, legends and poetry of all lands and has always been a flower to stimulate dreams and thought.

AN intense interest has been shown of late in the home culture of this one of the most beautiful of all flowers.

HOUSE PLANTS

It may be propagated from cuttings (Fig. 93) placed in clean sand, the cuttings fitted as firmly as possible into position. In about



FIG. 92.—THE DOROTHY PERKINS

twenty-five or thirty days they will be ready to shift into two-inch pots filled with garden loam and a little sand. Cuttings made in Oc-

ROSE

tober and cared for through the winter will make excellent plants for the following fall. As soon as the ball gets filled with roots, which



FIG. 93.—ROSE CUTTINGS

A, terminal short cuttings; B, cut made at the node (one eye should be above the sand); C, single eye cutting four weeks after planting.

usually takes from six to eight weeks, shift into a larger pot, making a succession of shifts until a six- to eight-inch pot is reached.

HOUSE PLANTS

The soil used in rose culture is of the greatest importance. A clay loam is the best, not too stiff. Add about a half-pint of fine bone meal to a bushel of soil and a very little finely shredded cow manure, well decayed. Each time the plant is repotted after the fifth month pound the soil around the roots, the tighter the better.

Stir the surface of the soil lightly from time to time; add a little top dressing of manure secured from an old cow pasture, the manure having been exposed for some time, chopped fine and scattered over the surface during the summer; if the greenhouse is not available, plunge the pot in the soil in a partly shaded place out of doors. Never allow the soil to become dry but do not overwater. A little rough ashes at the bottom of the pot over the drainage hole will aid, as proper drainage cannot be overemphasized. Spray with clear water and with force almost every bright day during the summer. Before the fall chills get into the air remove the rose to a sunny window.

ROSE

The great difficulty in house culture is to arrange for proper spraying which should be done on clear days during the winter, always having the foliage thoroughly dry by night. If the foliage is damp for two or three days the plant becomes subject to mildew, which causes the leaf to curl, turn yellow and drop off. If the leaves on the lower part of the plant become affected, dust with flowers of sulphur (Fig. 94), both on the upper and lower surface to the leaf. It is a good practice to dust the plant on dull days regardless of the appearance of the disease, prevention being better than a cure.

If the bloom appears in the summer, prune back the plant and keep it in check until October, then let the flower develop for winter use. As soon as the petals fall pinch off the seed pod, for the development of seed will tempt the plant to stop flowering, all of its strength going into the production of seed.

The rose should be given every advantage for sunshine the greatest number of hours dur-

HOUSE PLANTS

ing the winter. It also requires a high temperature, from 75° to 80° F. during the day and 55° to 60° F. at night, but I have seen beautifully developed plants grown in a varied temperature.

After the buds appear it is well to add once a week a thin liquid manure. This will increase the size of the flower and give vigor to the plant. Care must be taken not to overfeed it.

The aphid is a common enemy of the home-grown rose. It may be controlled by dusting the young shoots and under sides of leaves with tobacco dust. Tobacco stems scattered among the pots will also aid in combatting this insect. This is not always convenient in the home but may be practiced in the conservatory.

If small gray lines appear on the surface of the leaves between the veins, the under side of the foliage will reveal a slender white insect known as the rose-leaf hopper (*Typhlocyba rosæ*) which is often mistaken for thrips. Both of these insects are dreaded enemies of the rose.

ROSE

REMEDIES.—Spray with whale-oil soap or tobacco extracts, or dust with dry Pyrethrum while the foliage is wet, and after six hours wash off with a strong spray of clear water.

The red spider is kept in check by continual spraying with water during the summer and winter.

If during the summer the rose beetle or rose bug, as it is sometimes called, attacks the foliage, spray with arsenate of lead, two table-spoonfuls to a common pail of water. Paris green is not advisable on account of its bad effect on the foliage. The rose is easily affected with gas, the leaves turning yellow and dropping off.

It is advisable for those desiring to raise the rose in sunny windows to buy a well-developed pot plant in the fall from a florist. It is difficult to propagate the rose, but I should not discourage anyone's attempting it.

I would hesitate to advise the culture of certain varieties in the ordinary house because the

HOUSE PLANTS

poorest variety will sometimes do beautifully with those having the knack or art of rose-growing, while others with the best varieties at



FIG. 94.—THE MILDEW DUSTED WITH FLOWERS OF SULPHUR

hand will fail. If well-developed plants are secured in the fall the following varieties may prove satisfactory:

ROSE

Dorothy Perkins—pink, small flower and in clusters; very bushy and beautiful.

Mrs. George Shawyer—beautiful pink; free flowering; strong and vigorous grower. The flower lasts longer on the bench or in a vase than any other variety I know.

Richmond—rich shade of crimson.

White Killarney—most beautiful when the bud is about to open. A pure white with a flush of pink.

American Beauty—a rich, deep pink with odor entirely distinct. Some amateurs have been successful with this beautiful rose.

Mrs. Aaron Ward—bud a deep Indian yellow; as it opens the outer margin is of a bright yellow. The flower is exquisite and the plant a free bloomer. This rose will win the heart of every rosarian.

There are many other varieties suited for pot or bench culture, listed in catalogs. Each rose does best under special care which each individual must learn from experience, but the following "Do's" and "Don't's" may help:

DON'T'S

Don't spray with cold water on cold days.

Don't let insects and disease infect your roses.

Don't try to raise roses in a shaded window.

HOUSE PLANTS

Don't use sandy loam.

Don't put the plant out in cold rains to have a bath.

Don't let the pot dry out.

Don't allow the pot to stand in a vessel containing water.

Don't soak the soil.

Don't pour soapsuds over the plant.

Don't let the rose stand in a room containing escaping gas.

Don't let the rose stand in a draught.

Don't fail to pack soil around the plant firmly.

Don't give up if you fail the first time. Try again.

DO'S

Do take an interest from the beginning and keep it up.

Do use a clay loam, not too stiff.

Do shift the plants in a succession of pots.

Do spray every clear day.

Do keep foliage dry during the night.

ROSE

Do dust with sulphur on dull days.

Do keep a supply of preventives on hand.

Do keep your eyes open, your heart in tune
and your hands busy with rose culture and you
will succeed.

CHAPTER XVII

PALM

Nat. Ord. Palmaceæ

In the dawn of history we have records that the Babylonians made wine from the sugar secured from the palm. The Egyptians used its graceful, dignified foliage to adorn their buildings, the remains of which may still be seen, carved in stone. It was a token of triumph among the Jews and a part of the festive decorations for the Romans at their banquets.

Linnaeus deservedly called the palm the "Princess of the Vegetable Kingdom."

The date palm (*Phœnix dactylifera*) has furnished food for the Arabs and peoples of Africa for centuries and is now imported all over the world.

The cocoanut palm (*Coccoloba nercifera*) is the most useful of the palm family, supplying food of various kinds, clothing, material for houses, utensils, rope, oils and fuel.

Other palms supply wax, starchy matter and sugar, which may be fermented so as to form an intoxicating drink.

Brooms, fans and ropes are the most common articles made from this plant.

PALM

Wherever civilization has gone the palm has followed as an ornamental plant to decorate church and home.

The palm will stand some bad or hard usage,

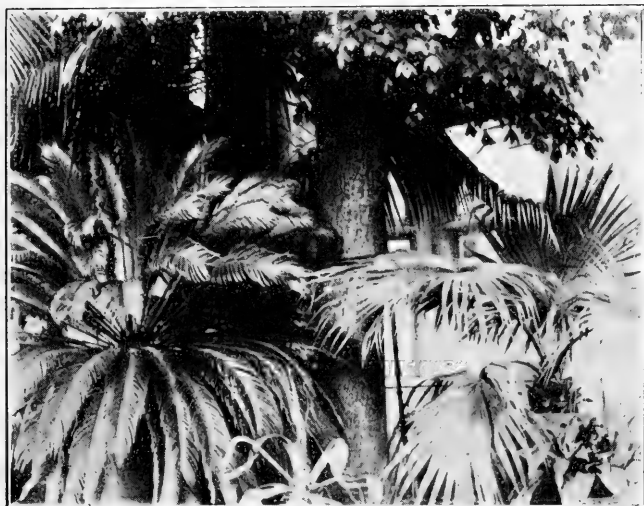


FIG. 95.—A GROUP OF PALMS IN A SHADY PLACE FOR THE SUMMER

but if once really injured it takes a long time to recover.

We must remember first of all that the plant is a native of the tropics and therefore does not require a great amount of water, even though

HOUSE PLANTS

they edge the wells of cooling water in the desert. It is a common practice to place the palm in a jardiniere half full of water in the corner of a room. The foliage tips soon turn brown and the leaves finally die one by one; then the blame is placed on the florist from whom the palm was secured. A perfect drainage of both air and water is of the greatest importance to the successful culture of this favorite house plant, and in order to insure this we should place at least an inch of broken pots, bits of charcoal or even small stones at the bottom of the pot or tub. Cover this drainage material with sod fiber, cocoa fiber or decayed leaf mold, just enough to prevent the soil from sifting through into the rough material, and this will always insure proper drainage. On the other hand the plant should never suffer from drought.

The best soil for the palm consists of two parts garden loam, one part clay, one-half part sharp sand and one-half part powdered sheep manure. A little wood ashes scattered through

PALM

the compost is very desirable. When the palm is transplanted the soil should be packed firmly about the roots without injuring them. The



FIG. 96.—A FINE SPECIMEN OF *KENTIA BELMOREANA*

plant should never be allowed to become pot-bound. Loosen the roots a little on the sides and bottom and if the palm is in a large tub

HOUSE PLANTS

and is to be repotted it is advisable to remove a few of the outer roots, but this should only be done in extreme cases.

During the winter the palm should be placed in a partly shaded spot in the room or hall but never where it may come in contact with gas or cold draughts. It should never be placed in the direct rays of the sun and if raised in a conservatory the glass should be treated in order to protect the plants.

The palm can stand various degrees of temperature but it always suffers greatly when the temperature is below 45° . It thrives best in 75° during the day and 60° at night.

The palm should have a bath in water having the chill taken off, syringed when possible, and three or four times during the winter the leaves should be sponged with fish-oil soap. Hold the left hand flat under the leaf, and with the sponge in the right hand draw the hands from the midrib out to the edge of the leaf. (Fig. 97.) Wash on both sides with the soap and

PALM

then with clean water. The water should be at a temperature of 79° .

During the summer the plants should be placed in a partly shaded spot with the pots

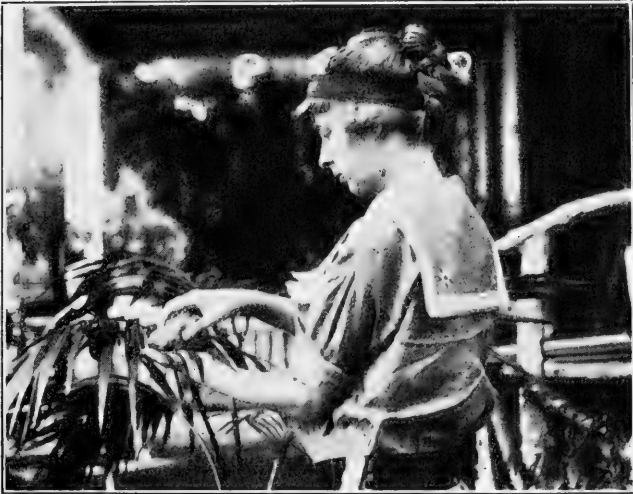


FIG. 97.—POSITION OF THE HANDS WHILE WASHING A PALM LEAF

plunged to the rim in the soil. Where the plants are large they should be watered once a week according to the weather. They should be removed to the conservatory or house before the slightest frost appears, especially if new,

HOUSE PLANTS

soft leaves have developed during the summer.

The palm is subject to several scale insects (Fig. 98), and especially the San José scale. These tiny insects are carried by other insects, birds, etc., and they often destroy the plant in a short time. Palms placed near or under apple, plum or peach trees during the summer are in danger of a bad infection, especially if the trees are not sprayed, for the scale has spread to every part of the country. Keep a sharp eye open for indications of the scale on the palm and wash with a sponge as recommended with a solution of fish- or whale-oil soap in a common bucket, adding three table-spoonfuls of commercial lime sulphur. Allow the plant to stand for a day and then bathe with clear water.

Mealy bugs at times infest such varieties as the *Phoenix reclinata* and may be dislodged with a sponge and toothbrush dipped in fish-oil soap. Care must be taken not to crack the leaves when washing and to have the water free

PALM

from any grit that might scratch the surface of the leaf.

Never place the plant in the cold chilly rains



FIG. 98.—SAN JOSE SCALE ON A PALM LEAF

This scale may be carried in various ways to the plants from plum, apple, or peach trees under which they are resting for the summer.

of the fall in order to give it a bath; also do not feed the palms liquid cow manure or repot too

HOUSE PLANTS

often, for the plant develops to greater perfection in restricted pot room. A teaspoonful of ammonia in a cup of water given to a six-inch pot plant three or four times during the season



FIG. 99.—THE COCOA WEDDELIANA

will stimulate growth, but this should be followed by adding a little top dressing of powdered sheep manure worked into the soil.

Large brown or burned spots sometimes ap-

PALM

pear on the leaves of the *Latania borbonica* especially and are caused by a flaw in the glass where the sun's rays are concentrated to one spot. Remove the plant to a shady place.

Do not allow the leaves to be whipped or lashed by the winds during the summer or frostbitten in the fall or winter. For general culture the following varieties are recommended:

Kentia belmoreana.

Kentia forsteriana.

Cycas revoluta.

Coccoloba weddelliana.

Areca lutescens.

Latania borbonica.

Pandanus veitchii.

Phoenix reclinata.

CHAPTER XVIII

FERN

The ancients were superstitious of certain species of ferns, for near them lurked creatures who brought blessing or curse according to the species.

Like the palm they have followed civilization as a decorative plant and around these delicate plants it is thought the spirits and fairies still hold forth.

In geological times the ferns were much larger than they are now, but we still find species in the swamps of the tropics reaching great height.

A certain species of ferns in Liberia are boiled and used as a tea. Some of the varieties have become of great commercial value and there seems to be no limit to their size, shape or color.

WHILE ferns are among the most delicate of our plants, yet they are the most satisfactory foliage plants for general culture. The house-keeper who is a lover of plants cherishes the family fern, which is pointed to with the greatest pride.

FERN

There is no question that many of the common woods ferns, such as the purple cliff brake (*Pallaea atropurpurea*), walking leaf (*Comp-*



FIG. 100.—*NEPHROLEPIS MAGNIFICA*

tosius rhizophyllus), common polypody (*Polypodium vulgare*), shield fern (*Dryopteris spinulosa*, var. *intermedia*), Christmas

HOUSE PLANTS

fern (*Polystichum acrostichoides*), and others would do well out-of-doors if given the proper environment and a little care.

Ferns cannot be grown in a room where

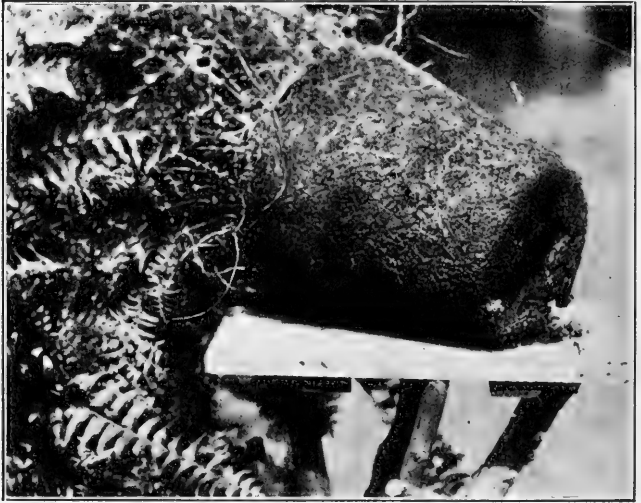


FIG. 101.—FINE FEATHERY ROOTS OF THE BOSTON FERN
Note the piece of drainage crock.

there is the slightest breath of gas; the tender tips of the fronds will turn brown, the plant will sicken quickly and die.

The plant should never be cramped for room, but should be placed in a fair-sized pot, de-

FERN

time standing in a jardiniere partly filled with water. The soil soon becomes sour and the leaves turn yellow and die.

The air should be moist and warm, and where benches are used a fine sifting of ashes over the bottom sprinkled with a little lime will guarantee good drainage. On warm days sprinkle the foliage with water, and where this is not possible keep a vessel of water near the plants on the radiator or register. Dry air is not congenial to the best growth of ferns.

These delicate plants should not be placed in the sun and if kept in the window during the summer the glass should be whitewashed with lime and clay. This does not mean they should be grown in the dark, but never where the direct rays of the sun may strike them, especially during the warm months of summer.

Some varieties of ferns are attacked by mealy bug, and these insects should be removed as soon as they appear by submerging the fronds in a suds of resin fish-oil soap. After a few hours spray with clear water, dislodg-

HOUSE PLANTS

ing the insect. The common scale (*Lecanium hemisphaericum*) is often found in the Boston fern and others. Bathe with fir-tree oil, using



FIG. 104.—CRESTED FERN (*PTERIS WILSONI*)

a soft sponge. Be careful not to crack or break the frond while washing. Place the left hand flat under the leaf and with the right hand dislodge the insects.

FERN

The slug is a miserable enemy, especially to the maidenhair fern, coming out only at night and leaving traces of its movements by a shiny slime, like a path, over the foliage and here and



FIG. 105.—CROW'S NEST OR BIRD'S NEST FERN (*ASPLENIUM NIDUS AVIS*)

there a tender young frond eaten. Early in the morning carefully lift the pot and examine the drainage hole, as the slug often lurks in such moist places. Sprinkle a little salt over the slug. It may also be captured at night while at work and destroyed. They are more

HOUSE PLANTS

common in greenhouses where the walls are rough and damp, but they are discovered not infrequently among the house plants. Ashes



FIG. 106.—A BEAUTIFUL BOSTON FERN (*N. EXALTATA*, VAR. *BOSTONIENSIS*)

and lime sprinkled over the bottom of the bench are an efficient preventive. Ferns should receive special care during cold nights, never

FERN

allowing a cold draught to reach them. I have seen a blanket tacked over the window between the ferns and the glass. This prevented any chill from striking the plants.

The following ten cultivated ferns do well in the window garden:

Adiantum croweanum—hardest of the maidenhair ferns.

Nephrolepis bostoniensis—Boston fern.

Nephrolepis magnifica.

Nephrolepis piersoni elegantissima.

Nephrolepis elegantissima compacta.

Nephrolepis scattii.

Cyrtomium falcatum—holly fern.

Asplenium nidus avis—bird's nest fern.

Goniophlebium subauniculatum—fine for a suspended basket in a conservatory.

There are a number of miscellaneous designs on the market of aërial ferns, from a fern ball to the fantastic arrangement in the shape of a monkey hanging by one arm. The scaly hare's foot (*Davallia bullata*) is the only satisfactory variety for this type of culture.

The fern does best in a moist, warm room and should receive considerable water. The

HOUSE PLANTS

plant requires a rest for at least two months each year, after which it may be brought into culture.

There are also on the market today many types and styles of fern dishes. It is most advisable to secure a fern dish that can be lifted out of the ornamental dish and watered. In this way the soil is kept sweet and the ferns kept growing, for stagnant water in the ornamental dish will soon destroy the tender roots.

There are many combinations of plants for centerpieces but the following are both ornamental and satisfactory:

A. Center *Maranta vittata*, small plant.

Pteris wilsoni.

Pteris adiantoides.

Cyrtomium falcatum.

B. *Dracaena indivisa*, small plants.

Cyrtomium rochfordianum.

Pteris serrulata.

Pteris argyraea.

C. Center a large *Asplenium nidus avis*, surrounded by

Pteris nelsoni, *P. cretica*, *Albo-Lineata*, *Cyrtomium falcatum*, *Aspidium tsussimense*.

FERN

There are also combinations with *Dracaena termenalis*, *Dieffenbachia picta*, crotons and many other plants for the center of the dish surrounded by small ferns mostly of the *Pteris*



FIG. 107.—A BEAUTIFUL PTERIS FERN

group. Fern dishes should be given an opportunity for air and should never be allowed to dry out, as is often the case. After a time the ferns may be potted and a new combina-

HOUSE PLANTS

tion tried. This will give variety to the decoration and will also give the ferns time to recover from the unnatural condition in which they have been living.

ASPARAGUS FERNS

Nat. Ord. Liliaceæ

The asparagus has derived its name from, *A*, intensive, and *sparasso*, to tear; in reference to the strong prickles of some species.

The cultivated species were introduced from Southern Africa in 1876 and since then have grown rapidly in favor as pot plants and as cut sprays for decorative purposes.

The *Asparagus sprengeri* is an excellent plant for window boxes or as an individual pot plant. Its drooping habit with a beautiful profusion of feathery green foliage places it in the first rank of house-grown plants.

The plant may be propagated from seed taken from the berries found on the stem. After they have turned red allow them to ripen and stand three or four weeks before planting.

FERN

Cover with sand to twice the diameter of the seed. When the seedlings are about an inch in height transplant into two-inch pots. Plants may be divided, but care must be taken



FIG. 108.—*ASPARAGUS SPRENGERI*

to split the crown without tearing away all of the roots from one of the halves. With a sharp knife cut the crown, roots and ball of earth in half, loosen the roots a little and repot. The *Asparagus sprengeri* has swollen growths on

HOUSE PLANTS

the roots, which contain mostly water. These reservoirs are not sufficient to supply the plant when the soil is very dry; hence the plant should receive a liberal amount of water. The soil should be moderately rich, with a little sand sifted in. If the plant becomes pot-bound the stems grow straggling and the needle-like leaves turn yellow and drop off. Lack of food and water will act on the plant in the same manner.

A frequent spraying with clear water will keep the foliage bright and the plant healthy.

If the mealy bug should appear submerge the plant by holding the pot above the tub, one hand over the surface of the soil to prevent it from dropping out, and give a thorough washing in suds of fish-oil soap or resin fish-oil soap. Allow the plant to stand for several hours, then spray with clear water.

The *Asparagus sprengeri* is a favorite plant for hanging baskets, making it appear like a feathery mass of emerald green.

The old spikes or stems should be cut back

FERN

from time to time and the new spikes given a chance to develop.

The *Asparagus plumosus nanus* has a more feathery foliage and is used mostly with cut



FIG. 109.—*ASPARAGUS PLUMOSUS NANUS*

flowers, though very attractive pot plants may be raised. The only danger is that the stems grow long and spindling. The plant should

HOUSE PLANTS

be trained on a trellis or tied up and not allowed to droop. It is attractive in the corner of a window in a partly shaded place, the fronds trained along the frame of the window.

Both the *sprengeri* and *plumosus* are beautiful if placed among bright flowering plants. They give a light, airy appearance to the window garden and cannot be praised too highly.

CHAPTER XIX

CACTUS

Nat. Ord. Cactaceæ

The name cactus was given to this semi-spring plant by Theophrastus. In 1807 Linnaeus, the father of botany, knew but thirty species, while at the present time we have between five hundred and six hundred varieties.

There is a story that the Aztecs had been told by a prophet to settle at the place where they should find an eagle, a serpent and a cactus. This place, it so happened, was Santo Domingo, which was founded in 1312. The greater number of our cacti come from the burning plains of Brazil and Mexico.

The cactus has become of economic value as food for cattle and it has many times saved the lives of men who were parched with thirst, by giving drink from its watery leaves or stem.

THE cactus in its native habitat is subject to alternate seasons of extreme moisture and extreme drought, so that the plant has evolved

HOUSE PLANTS

into a reservoir of moisture to counteract the conditions in which it lives.

It is not necessary to have the heat extreme, as some folks think, in order to grow this plant of the arid regions with success, but it should always have a season of rest in a shady place, where the amount of watering may be controlled. Decrease the water during the resting season and also during the winter, and increase the amount of water during the flowering season.

The best soil in general is one-half rich light garden loam, and one-half white sand. A little cocoa fiber may be added so that proper drainage may be insured. The plant can stand any amount of sun, but succumbs quickly to chills or cold draughts. It should never be placed near the windows during the extreme cold weather and special care should be taken especially during the night.

Most of the cacti may be propagated by breaking off a flat leaf at a joint and rooting it in the sand.

CACTUS

The *Cereus grandiflorus* is a celebrated type growing from six to twelve feet in height. The



FIG. 110.—NIGHT-BLOOMING CEREUS AT 9:30 P. M.

flower is sweet-scented and in a few hours after opening it closes, never to open again. The plant itself is interesting and the flower is al-

HOUSE PLANTS

ways something to anticipate. The flower is like a huge fairy torchlight and most beautiful.

Cereus macdonaldi is the largest bloomer of the night-blooming cereus, the flower being six to fourteen inches in diameter.

The phyllocactus group are of the greatest interest, having broad flat leaf-like branches. The beautiful flowers are produced from the indentures along the edge. There are several varieties of the phyllocactus, which are satisfactory if one is interested in these cactus plants:

Phyllanthus—flower creamy white, a night-blooming cereus.

Phyllanthoides—flower tinted with rose, striped with irregular streaks of white. The flower exhales a peculiar odor.

Hookeii—flower white and fragrant.

The *Epiphyllum* or crab's claw cactus is by far the most commonly grown, and among the most desirable for house plants. The flowers are borne on the ends of the leaflike branches

CACTUS

and are of the most brilliant colors. They require a richer soil than the others, plenty of



FIG. 111.—NIGHT-BLOOMING CEREUS AT 4:30 A. M.

clean air, water and sunshine but during the winter months the watering must be carefully regulated.

HOUSE PLANTS

The *Truncatum* is among the best growers in this group and the best for home culture.

Many of the larger types are stored in a dry cellar during the winter, protected from frost and gas. In the early spring they are brought to light, the dust is washed off by syringe and water is applied to the soil. The flowers appear in the month of June and later.

The cactus can stand many hardships, but it should receive as much care as the other plants in order to reap the best harvest of bloom and develop the plant to a satisfactory and pleasing appearance.

CHAPTER XX

VINES

MADEIRA VINE

Nat. Ord. Chenopodiaceæ

THIS beautiful climbing tuberous-rooted plant is a native of the Andes. It is a rapid grower and profuse bloomer if given a rich loose garden loam, sufficient water and sunshine. It is propagated by the division of roots or by seed.

ENGLISH IVY (HEDERA HELIX)

Nat. Ord. Araliaceæ

This hardy ivy has long been a favorite for out-of-door use as well as the window garden. It requires rich soil and considerable water and will do well with a limited amount of sunshine.

HOUSE PLANTS

The variegated varieties are more tender than the green leaf variety and require a higher temperature. This vine is easily propagated by cuttings.

GERMAN IVY (SENECIA SCANDENS)

Nat. Ord. Compositæ

This beautiful ivy is easily trained about the window. Give it the same temperature as the English ivy but increase the sunlight. It is often infested by aphid and should be dusted on the under side of the leaves with tobacco powder.

CUP AND SAUCER FLOWER (COBÆA SCANDENS)

Nat. Ord. Polemoniaceæ

This vine is a fast-growing climber, a native of Mexico. If the seed is sown in mid-winter, the plants summered out of doors, pruned back and potted in September, it

VINES

makes a most desirable flowering plant as well as a fine climber.

It is advisable to set the cobaea seed edge-



FIG. 112.—A POT OF GERMAN IVY

wise in the soil. The beautiful festoon of foliage during the winter months is most attractive.

HOUSE PLANTS

THUNBERGIA ALATA

Nat. Ord. Acanthaceæ

This handsome climbing plant is a half-hardy annual. If the seed is sown in August it will produce a fine plant during the winter for ornamental purposes, to be trained over trellises or arranged about the window. The plant does best in a temperature of 70° to 75° and should have a liberal supply of rich garden loam, water and sunshine.

NASTURTIUM

Nat. Ord. Convolvulaceæ

This old favorite is propagated from seed, which should be planted in the window box or pot and should never be disturbed.

The soil should be rich and a free supply of water and sunshine are necessary for the best results.

The nasturtium leaf withers if allowed to be

VINES

whipped by the wind, as often happens with the plants grown in window boxes. Ventilation is necessary but draughts and winds are detrimental to growth. Plants should produce bloom two months after seeding.

SAXIFRAGA SARMENTOSA

Nat. Ord. Saxifragaceæ

There are over a hundred and fifty species of this plant. The *Saxifraga sarmentosa* is a native of China and is commonly used for hanging baskets. It is propagated by rooting the young plants that appear on the ends of the long stolons that hang from the parent plant.

The plant requires a rich soil and a free supply of water and light. It will stand a low temperature, but not freezing. Its flower is spider-shaped, very interesting and delicate.

HOUSE PLANTS

TRADESCANTIA

Nat. Ord. Commelynaceæ

The tradescantia was named in honor of John Tradescant, gardener to Charles I., who introduced the first specimen to Europe.

The aquatica and others are known everywhere as "The Wandering Jew."

Some of the species come from the north and from tropical America.

The window garden would hardly be complete without the old-fashioned Wandering Jew.

It is easily propagated from cuttings at any season of the year and will grow in water and soil alike. It is a most desirable plant for edging a window box, especially in a shady place, or the edge of a hanging basket.

The soil should not be rich, but light, and always with a free supply of water.

If the foliage becomes yellow and sickly the plant is probably pot-bound, or there may be gas in the room. Repot and pinch back.

It is advisable to start new plants at the end

VINES



FIG. 113.—A HANGING BASKET OF TRADESCANTIA OR WANDERING
JEW

The drooping stems are six feet long.

of each summer, so as to have fresh, vigorous stock for winter culture.

HOUSE PLANTS

If the stems become straggling it is best to pinch them back and then the stem will branch and the foliage will cover both the surface and the sides of the pot or basket.

Zebrina is one of the best varieties and thrives in a moist, shady place. The leaf is a dark green, striped with silvery bands.

Multicolor has a straggling habit, with light green foliage, variegated with white and pink stripes; very beautiful.

Other satisfactory varieties for the sitting-room are:

Repens—white, striped variety.

Vittata.

Aquatica—fine for water culture.

VINCA

Nat. Ord. Apocynaceæ

The *Vinca major variegata* is one of the finest plants for hanging baskets, vases, porch and window boxes. The rich, shining green, edged with white, gracefully drooping over the

VINES

edge of the window box and late in the season adding to its beauty with a pale blue flower, makes it a most desirable house plant.



FIG. 114.—THE GRACEFUL VINCA MAJOR VARIEGATA.

There are two ways of propagating the vinca. The more common way is by division. Take the plant from the pot and with a sharp

HOUSE PLANTS

knife split the crown, shake off the soil and separate the roots by hand.

The other way is by cuttings of the soft wood. Make the cut at the leaf or node, removing four leaves close to the stem with a sharp knife. The cutting should not be over two inches in length. Place in sand and in about three weeks roots will begin to form.

The vinca is practically free from disease, but it often turns thin and yellow by becoming pot-bound. Examine the roots. If they are massed tightly in the pot, split the crown or remove part of the roots at the bottom of the clump and loosen roots about the outside. Then repot in garden loam, rich in well decayed horse or cow manure. A little chicken manure added to the soil will give good results.

Aphides are common on the young shoots. They may be controlled by dusting with Pyrethrum or tobacco dust.

The other variety desirable for home use is the *Vinca harrisonii*. It has pale green in the center of leaf, blocked with white.

VINES

JASMINUM

Nat. Ord. Olecæ

The jasmine, or ysmynn as it is called in the Arabic, was introduced in 1629 from the East Indies.

It is the Arab's love flower and it symbolized long affection between sweethearts. At one time it was a soft pink, as delicate as the down, but on the night of the Crucifixion it turned white from the pain and agony which it endured as the Christ hung upon the Cross. Its delicate fragrance has stimulated the poets to dream of tenderness and love, while to others it is a symbol of sadness.

There are several species of the jasminum which are suited for the home or conservatory culture during the winter or for climbing about on a support during the summer in shady spots on the porch or veranda.

The plant is easily propagated from cuttings made the latter part of March and will develop to good-sized plants the first season.

The soil should be a combination of two parts garden loam, one part shredded cow manure and one part decayed sod. A little sharp

HOUSE PLANTS

sand should also be added to insure the lightness and drainage of the soil.

The plant should be cut back to stimulate new growth, especially during the fall, so that a good supply of young shoots are formed for winter flowering.

The *Jasminum grandiflorum*, which is one of the best known winter-flowering varieties, succumbs easily to frost. It requires a fair amount of sunshine and a liberal supply of water.

The plant should be sprayed with water with the chill taken off on clear days during the growing season. A warm, moist atmosphere is the best for its growth.

Plant lice are common visitors to the *Jasminum* and should be destroyed as soon as they appear by dusting with tobacco or *Pyrethrum*, or spraying with **Black Leaf 40**.

The *Jasminum gracillimum* is beautiful in a hanging basket; the flower is white and large, while the foliage is small and a bright green.

The *Jasminum revolutum* has a very fra-

VINES

grant yellow flower scattered through the dark evergreen foliage. The plant is a climbing shrub and most satisfactory in a pot or a bracket and trained about a window.

The graceful habit of this plant, the freedom and fragrance of the flower, make it most desirable for house culture.

CHAPTER XXI

PORCH AND WINDOW BOXES

THE BEST PLANTS AND THEIR ARRANGEMENT

IF you cannot secure proper soil and healthy plants and if it is inconvenient to apply the necessary water at the proper time it is better to give up the idea of window or porch gardening before you start.

Window and porch boxes vary in size as much as opinions vary. The length of the box does not matter so long as it is in keeping with the size of the window or the shape and position of the porch, but the depth does matter greatly. No window or porch box should be less than six inches deep and greater success is insured if the depth is from ten to twelve inches.

PORCH AND WINDOW BOXES

A number of half-inch holes should be made in the bottom of the box to let out the surplus water and to admit air, which aids in keeping the soil sweet and the root system healthy.



FIG. 115.—AN ARTISTIC PORCH BOX AND LATTICE
Shrubs planted in front of this porch would add much to its beauty.

The width of the boxes may vary from nine to eighteen inches.

To fill them place pieces of crock over the holes in the bottoms of the boxes to insure proper drainage, then put in two inches of

HOUSE PLANTS

well-rotted cow or horse manure mixed with a little soil. Fill the box to within an inch of the top with a rich soil, preferably from a compost heap.



FIG. 116.—A WINDOW BOX WITH GOOD LINES, BUT POORLY FILLED

Several conditions are to be considered with reference to the types of plants used. For a box placed in the shade one of the best vines to use is the *Vinca major variegata*, sometimes called periwinkle or myrtle. Another vine that has given great satisfaction in shady places is

PORCH AND WINDOW BOXES

the *Asparagus sprengeri*, which gives a feathery appearance to the edge of the box.

In the center place a well-grown *Dracaenas indivisa*, with a geranium or fuchsia on each side and a rex begonia at each end. Scatter ferns over the remaining spots of bare soil, fitting in varieties such as the *Pteris Wilsoni* (crested fern), *Crytomium falcatum* (holly fern), and *Pteris argyrea* and *Pteris cretica*. The ferns blend beautifully and intermingle their delicate colors with the foliage of the begonia and young spikes of the vinca.

Boxes placed in the sun or in part shade may be filled in various ways, using dracaenas for the center and on each side geraniums of one color such as the *Alphonse Riccard*, vermilion scarlet, or *M. Anatole Roseleur*, rose pink. The edges of the boxes are best covered by the graceful vinca. Many types of plants are suitable for window or porch boxes, but you must guard against clashes of color and must have vigorous plants.

When it is possible to secure well rotted cow

HOUSE PLANTS

manure chop it up fine and add it to the surface of the soil as a mulch that will aid in retaining moisture and will add fertilizer.

The watering of the boxes is of the greatest importance. As spring advances watering



FIG. 117.—SOD STEPS BALANCED ON EACH SIDE BY ARTISTIC PORCH BOXES

Photograph Taken in the Fall.

should be done later each day until finally during the summer months all moisture should be applied after sundown. Do not simply sprinkle water over the surface of the foliage and soil; make sure that the soil is well saturated, but never make it soggy. The number of times to

PORCH AND WINDOW BOXES

water depends upon the situation of the box, the soil, the type of plants, the wind, and so on.

The only insect enemy that does much damage to plants in boxes is the green aphid. The



FIG. 118.—AN ARTISTIC ENTRANCE, DRACAENAS, GERANIUMS AND VINCAS IN THE BOXES

plant lice suck the sap from the leaves and cause them to curl. When the aphides appear dust the under sides of the foliage with tobacco dust. After a few hours syringe the

HOUSE PLANTS

plant thoroughly with water, which will wash off the dead insects.

If window or porch boxes are properly filled with plants in keeping with this type of gardening, and the plants are given proper care, there is nothing that will add so much to the beauty of the house as this style of exterior decoration.

CHAPTER XXII

HANGING BASKETS

THERE are many kinds of hanging baskets, from the "Illinois," which has a reservoir, never drips, and may be supplied with water only

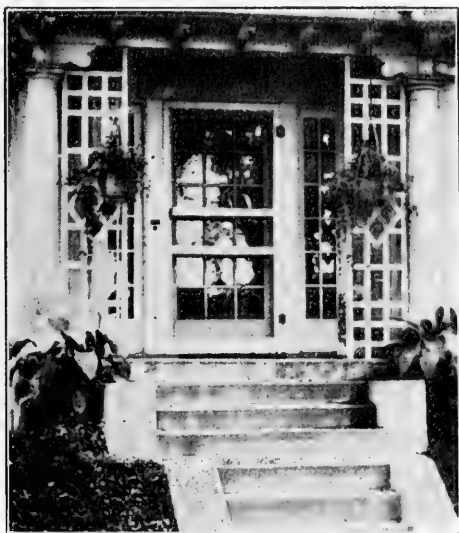


FIG. 119.—HANGING BASKETS ADD BEAUTY TO THIS ENTRANCE

HOUSE PLANTS

once a week, to the wire basket so common for porch use. There are crock baskets, made of

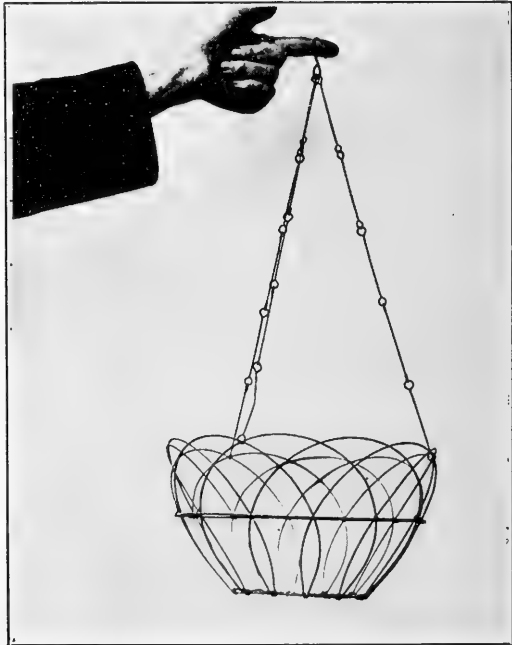


FIG. 120.—HANGING BASKET BEFORE FILLING

the same material as flowerpots, in a number of sizes and designs. The common wire basket is best lined with moss and then filled with

HANGING BASKETS

one-half garden loam and one-half shredded manure, well decayed. Both should be thoroughly mixed.

The greatest failure in hanging baskets comes from lack of water. It must be remembered that the contact with the air on all sides, with only the moss between the air and the soil, is severely drying. On hot days baskets should be given a watering by being submerged in a vessel filled with water for fifteen or twenty minutes in the evening, or watered slowly from the top, letting the water find its way into the soil and not allowing it to run off the surface.

The following combinations of plants are very pretty in baskets:

A

Center

Fuchsia
Heliotrope
Flowering and leaf begonias

Border

Asparagus sprengeri and Vinca auria

HOUSE PLANTS

B

Center

Dracaenas
Geraniums
Petunias

Border

Senecio or German ivy
Vinca variegated

C

Center

Pandanus
Small palms
Ferns
Begonia rex

Border

Saxifraga

D

Center

Pelargonium
Oxalis
Coleus

Border

Lobelia and saxifraga

There are many other combinations that are satisfactory, but the amateur should consider the habits and colors of the plants when combining them.

HANGING BASKETS

BASKETS

Ornamental baskets are often filled artistically with various combinations similar to those used in the hanging baskets. If the basket is



FIG. 121.—HANGING BASKET AFTER FILLING
Dracaena indivisa in the center, geraniums, coleus, petunias, German
ivy and *vinca variegata*.

HOUSE PLANTS

to be kept in a room, line the inside with heavy paper or moss. It should always be placed in a vessel that will retain water, otherwise the



FIG. 122.—A WELL FILLED BASKET

In the center the *Dracaena indivisa*, geraniums and petunias filling in and German ivy and vinca hanging over the sides.

bottom of the basket will mark the object on which it stands.

The following combinations are advised in art baskets:

HANGING BASKETS

A

Center

Dracaena terminalis

Tuberous-root begonias in bloom

Medium-sized crotons, leaves brilliantly colored

Border

Saxifraga or *vinca*

B

Center

Dracaena massangeana

Crotons

Small ferns: *Amerpoechlii*; *Whitmani*; *Cyrtomium falcatum* (holly fern); *Pteris serrulata cristata*

Border

German ivy and *vinca*

C

Center

A large plant of *Asparagus plumosus*, allowing the spikes to circle the handle

Crotons

Adiantum cuneatum

Adiantum farleyenses or *Adiantum rhodophyllum*

Border

Lobelia

There is no end of combinations with flowering plants and ferns or ferns with palms.

CHAPTER XXIII

SEASONAL CARE OF PLANTS

SPRING

USUALLY when the woods flowers appear in May we feel that it is time for us to put our house plants out of doors, but in many parts of the country the first of June is early enough. All danger of frost should be past. Should a threatening cold night warn you, cover the plants with a sheet; gradually the plants will become hardened to their new environment and will live without too great susceptibility to temperature changes. Do not neglect the plants after they have been moved out of doors, for the spring brings with it a host of enemies, which should be watched for and destroyed. Disease often appears with several days of muggy weather. Rose plants, especially, should be given the greatest care.

SEASONAL CARE OF PLANTS



FIG. 123.—THE EXTERIOR VIEW OF AN ATTRACTIVE BAY WINDOW
Always a bloom, always a thought.

It is always advisable after the plant has made some healthy growth to take cuttings for a new generation, so that the young plant will

HOUSE PLANTS

reach a favorable size and shape before fall. The plants will then give immediate results, and make the window look attractive from the start.

It seems to be human nature to regard with a greater interest a beautifully shaped plant about to bloom, than a young plant with only a promise of bloom. The out-of-door development of young plants is more favorable than the window culture. Do not destroy cuttings; if you cannot use them, give them away to your neighbor or the schoolchildren. Someone has said that "a country is known by its children." I venture to say that a home is known by the care of house plants.

Do not throw away the broken pots, for they will be useful in the fall. Wash the used pots, place them in a clean, dry place, so that they will be ready for fall use. Dirty pots left over summer are usually neglected in the fall when they are in demand. Pots should be soaked in a tub for a couple of days, so as to loosen the dirt from the pores, which should be open.

SEASONAL CARE OF PLANTS

Build the compost heap for the following year and keep a growing interest as spring wanes into summer.

SUMMER

Plants should be protected from the direct rays of the sun, especially the house plant for winter flowering. With some varieties it is best to remove them from the pot and give them freedom in the development of roots, but with such plants as the palms it is best to plunge the pots. Put about an inch of ashes and a little lime in the bottom of the trench, and this will prevent the earthworm from finding a way through the drainage hole into the pot. It will also insure proper drainage, which is of the greatest importance.

Where the plants are in tubs near the porch or on the veranda they should be put out for a bath during warm rains, or sprayed often. They should also be watered when necessary, care being taken not to wash the soil out of the pot if the hose is used. Watch for the red

HOUSE PLANTS

spider and other pests and give the plants prompt attention.

FALL

September is usually the month to bring many of the plants in. The dead foliage should be removed, and the plant should, from previous pruning, be well shaped. Care should be exercised in repotting not to use too large a pot and always use the proper soil, for your plants are to live and succeed in this limited space. Earthworms should be removed and the plants should be cleaned of any possible insect that might have escaped our eye during the summer. The room should receive as much ventilation as possible, but never a draught of cold bleak air. We must keep in mind the conditions out of doors, and the change from garden to house conditions should be made as gradual as possible.

Pots should be set level, so that the water will moisten all of the soil. Go very sparingly with the food at the beginning; the soil is fresh

SEASONAL CARE OF PLANTS

and rich and there is usually about as much food as can be properly assimilated by the plant. It should be trained for the desired shape when young and not twisted or bent into position when old. The cells are easily injured and the beauty of the plant impaired.

WINTER

The prevailing whiteness of this season gives the lovers of plants a hungry desire for the touch of green which may be realized in the window garden or conservatory. Winter brings with it all the perils to tender plant life and even the hardy plants are rocked to sleep by the late fall winds. I wish it were possible not to use a coal stove or gas stove in the room where the plants are grown. If this is necessary always have a vessel of water on the stove. Even where a furnace is used water should be placed in the room.

The evening is the time to shut off the heat from the bedroom, but do not forget the win-

HOUSE PLANTS

dow garden, and turn all the heat possible in its favor. The temperature should be lower in the evening than during the day, but never below 40°. It is as necessary for the plants to sleep in order to develop strong bodies as it is for the human to sleep, and too much heat will keep them awake. Remove dead leaves and flowers when they appear, for these are the death signs of a plant, inviting insects and disease.

Draughts from the windows or doors should be guarded against; blinds should be closed in the evening, as they will ward off cold and penetrating winds. Felt strips may be used over the cracks. The storm windows shut out the winds, but they also obstruct and diminish the value of the sun's rays. They are not advisable for window gardens. On severe nights newspapers may be placed between the window and the plants, for they keep off the intense chill which comes from the glass as well as from the joints. Windows should not be nailed, for on bright days, with the tempera-

SEASONAL CARE OF PLANTS

ture above freezing, ventilate the room, using discretion as to amount of air admitted and length of time. Plants cannot stand bad air, and they should never be kept in a sleeping-room during the night, for they consume the fresh air and give out carbon dioxide, which is detrimental to the health of the individual using the room. Sunlight is at a premium during the winter months, and the plants should be given every possible advantage, the pot being turned frequently so that the plant does not develop one-sided. On these lowering days of the winter the water should be decreased, but the plant should never suffer from drought. Those in hanging baskets or on brackets need more water than plants on benches. Protect the plants from dust and do not crowd them. Better have a few beautiful specimens admired by everyone than a great number of infirm and unattractive plants. The plants should be bathed often, especially on bright, clear days; sponge in the morning, so that the foliage may dry off before evening.

HOUSE PLANTS

If your plants have been so unfortunate as to get frozen, do not throw them out, but place them in a cool room, temperature between 34° and 38° . Spray eight to ten times a day with



FIG. 124.—THE INTERIOR OF AN ATTRACTIVE WINDOW GARDEN

cold water—never warm—and keep the plant in this dark, cool room for three to five days, and gradually bring it into the heat. Remove all parts not restored and give the plant special care.

Do not throw your dishwater on your plants

SEASONAL CARE OF PLANTS

as has been sometimes recommended. The soap (lye) and the grease are detrimental to the health. Also eliminate all traditional medicines, such as tea, coffee, beer, etc., for the plant will never accustom itself to such bad habits. There is no value in such beverages for plants.

There has been much question and debate as to the proper exposure. From my own experience I have had the greatest success with plants on the southeastern exposure, but most species will reach a stage of success wherever they are given sufficient sunshine and proper care.

There is a refining influence in the culture of plants, and we strengthen our faith by contact with the soil with all its wonders and possibilities. The more one studies plants the stronger grows the conviction in the heart that plants have many of the same attributes that humans have. They are harder to understand, for they are so silent in their work, from their wedding hour of bloom until the birth of

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their children, the seed; and even in death there is no complaint, regret or sighing. They are silent, though they tell us of their needs. The first principle of success in growing plants is to plant your heart in the soil and let the roots caress it. Love your plants, give them watchful care, discipline them as kindly as you would a child, and always remember they are alive and working.

CHAPTER XXIV

HELPFUL SUGGESTIONS

THERE are many combinations of plants that are suitable for a sunny window. For a solid green collection the *Ficus elastica* (rubber plant), palms, *Kentia forsteriana*, *Kentia belmoreana*, *Areca lutescens*, *Coccoloba meddleana*, *Phoenix roebelenii* and along the inner edge a few well-developed plants of *Aspidistra lurida variegata*, *Ananas* (variegated pineapple), *Aralia elegantissima*, and *Vinca* vines drooping over the edge of the bench.

Such flowering plants as the fuchsia, geraniums, pelargoniums, heliotrope, mignonette, stevia, combined with a few plants of *Farfugium grande*, *Maranta vittata* and *Vinca* make a beautiful combination.

For shady windows, several of the *dracaenas*, *dieffenbachias*, the *adeantum*, *nephro-*

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lepis, pteris and polypodium ferns may be arranged among the rex begonias. Taste as well as judgment should be used in the combination of plants, according to the environment in which the plants must live. Vines of various kinds add beauty to the winter gardens.

Fertilizers should be kept on hand. The liquid manure barrel should always be some distance from the house and protected from insects. Do not feed your flowering plants pieces of beefsteak or your ferns oysters. It takes some time for both to decay and become available as plant food, and it is not sanitary. Cigar butts and ashes should not be kept around plants; they are poor fertilizer, and not at all attractive. Plant food tablets as sold by florists and seedsmen are reliable.

Insecticides should be protected from dampness. Place the tobacco dust, Paris green, powdered arsenate, Pyrethrum, etc., in air-tight tin cans. Do not fail to keep a supply of insecticides close at hand, so as to check the insects as soon as they are discovered.

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Fungicides, such as flowers of sulphur, should always be kept from moisture. Don't be afraid to use it often on roses and especially on damp days.

Cultivation. The surface of the soil should be cultivated often with a fork or sharp stick. Do not go more than a quarter of an inch below the surface so as not to disturb the roots. Cultivation helps to preserve the moisture and keep the soil sweet.

Watering-pots should be light, durable and having a long spout so as easily to reach the pots without straining. The nozzle should have small holes when used to water a seed bed and larger holes when used for pots. If care is taken, no nozzle is necessary in watering pot plants. Do not allow the water to lodge on the sill, for it will soon cause decay. A small strip of wood, tacked tightly between the window box and the sill, will prevent decay of the sill. Pots should always be level before watering.

Saucers should be used under the pots to

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prevent dripping, but water should never be allowed to become stagnant in them. Jardinières should be washed with warm water once a week and both the plant and pot exposed to the sun for a few hours.

Brackets may be secured at any hardware store and are very satisfactory if placed at intervals on the window casings. Do not place heavy pots on the bracket to cause it to sag. Always use a saucer under the pot if placed on a bracket so as to prevent the water from dripping on the other plants below. Such plants as tradescantia, saxifraga, vinca and *Asparagus sprengeri* are beautiful on brackets.

Pots and pans should be kept on hand in various sizes. They should always be kept clean and stored in a dry cellar or shed. A board should be placed between the soil and the pot in the storeroom to prevent decay; the red clay disintegrates very quickly if kept moist. Do not paint the pots outside or in.

Stands, both wooden and iron, should be stored in a dry place when not in use. Clean

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and paint in the fall. The stands should be light and plants should always be removed be-



FIG. 125.—THE KING ADJUSTABLE PLANT STAND SUITABLE FOR CONSERVATORIES

fore shifting the stand. Do not try to move the stand and pot at the same time.

Trellises should be painted each fall so as

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to have them fresh and clean when brought into the house. A dark green is more desirable than a white. Don't fail to support all weak-stemmed plants. Care must be taken not to injure the stem or roots when fitting the trellis in the box or pot.

Sprayers and syringes should be kept dry and clean and always ready for use. After using an insecticide or fungicide wash out the sprayer with clean water. Do not buy cheap syringes to fight such insects as the red spider. A strong brass syringe should be provided so as to impart a strong force to the water. Have one place to keep the sprayers and always put them back after using.

Knife. Do not buy a cheap knife, but one made of good steel. It is necessary to have it sharp in order to make the best cuttings. A dull knife tears the cells.

Raffia is the best material for tying plants and may be secured from any seed store. It is broad and there is less danger of cracking the stem than with string.

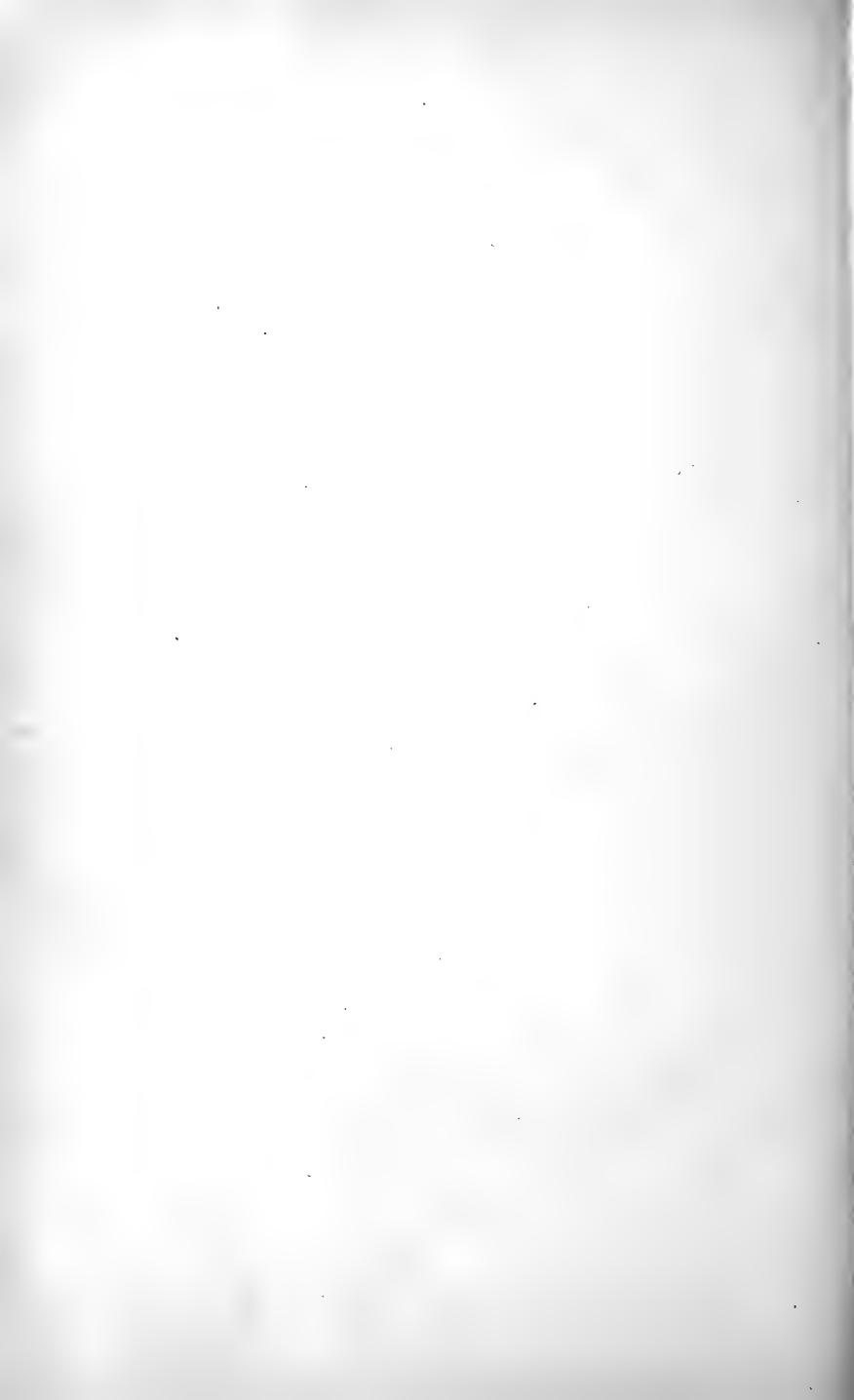
HELPFUL SUGGESTIONS

Window boxes should be painted inside and out once a year. Brackets should be used to support the box and keep it level, so that the water may be distributed evenly over the soil. Pans should be placed under window boxes, if used indoors, to prevent dripping of water on the floor and on the foliage of the other plants. Window boxes should receive fresh soil once a year and the plants be changed.

Table decorations, such as fern plants and pot plants, should be placed in the sunlight two to three hours each day, and in this way the plant is revived and will last much longer. Crowded fern pans will not last more than two months.

Keep your plants free from dead leaves and faded blooms. Never allow seed to develop. Do not allow the pots to become coated with moss. Do not buy cheap plants. Better have a few fine specimens than many sickly ones.

Plants should be moved back from the windows on extreme cold nights, but should not be put on radiators or over registers.



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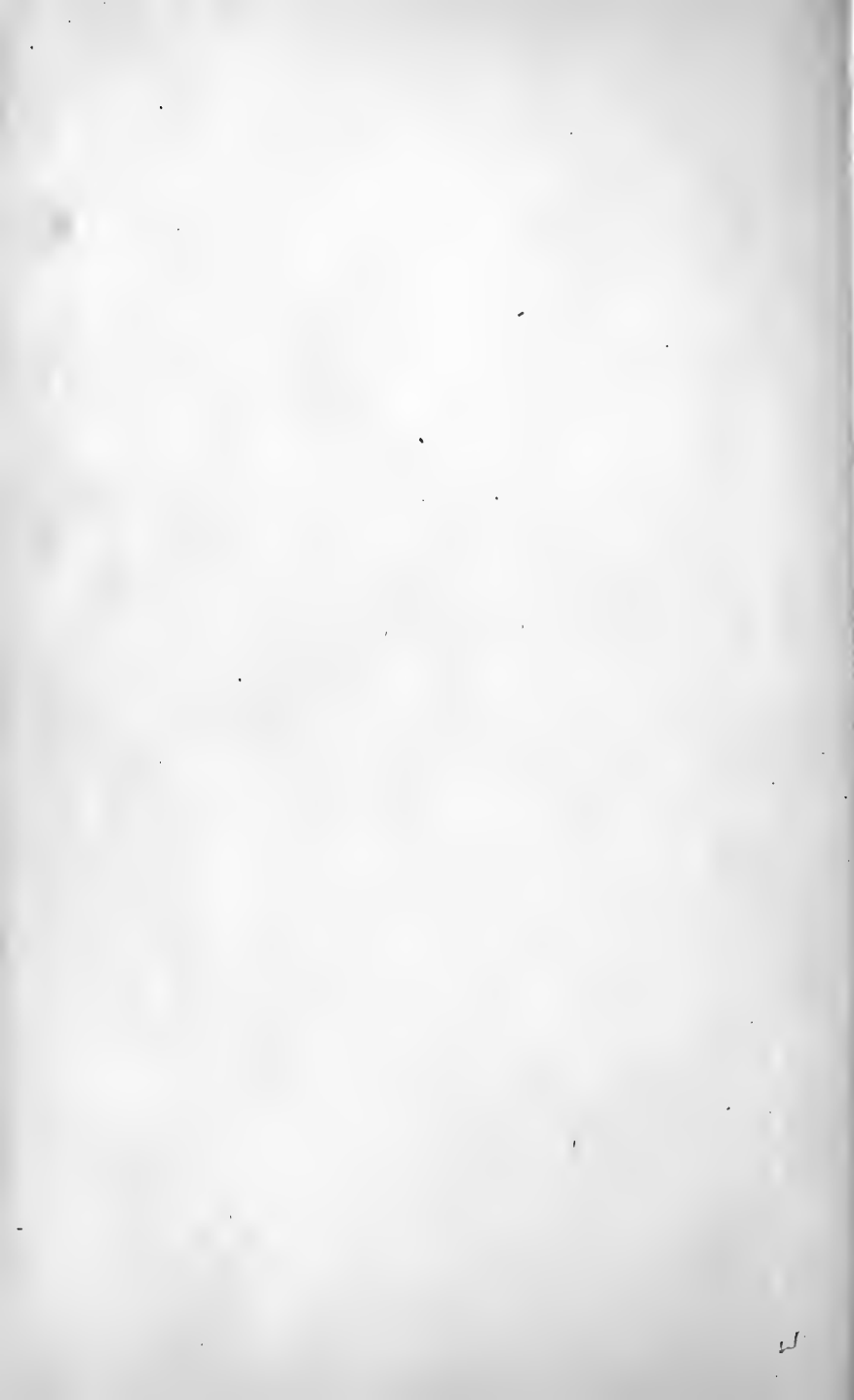
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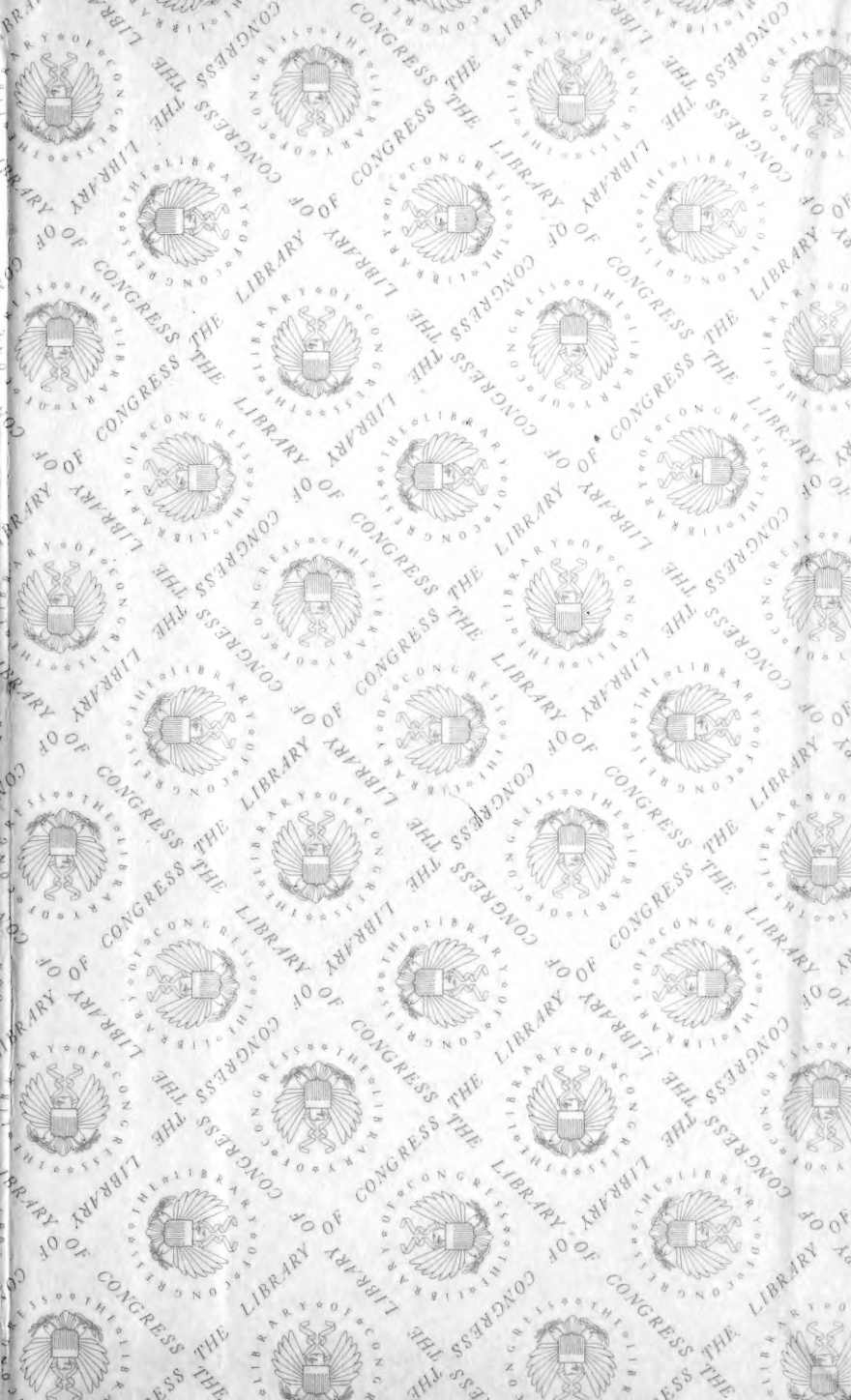












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